DOMESTIC ENGINEERING

A Weekly Record of Progress in Plumbing, Heating, Ventilation and all Matters Pertaining to Domestic Sanitation

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Our War Aim

"What we seek is the reign of law, based upon the consent of the governed and sustained by the organized opinion of mankind."

—President Woodrow Wilson.

CO-OPERATE WITH UNCLE SAM IN HIS GREAT ADVERTISING OFFENSIVE FOR THE CONSERVATION OF FUEL.

THE Fuel Administration will launch a comprehensive and intensive advertising and publicity offensive, setting forth the necessity and advantage of 100 per cent efficiency in coal economy.

Heating contractors will have an opportunity to co-operate with the Government in this great fuel conservation campaign which will open on October 1st. In thus co-operating they will be rendering a patriotic service as well as finding an essential source of more business as heating contractors.

Here is an unparalleled opportunity to teach patriotic houseowners that they can best co-operate with the Fuel Administration in preventing coal shortage by installing economical heating systems. They can be shown that this is the logical way to "Keep The Home Fires Burning" next winter.

In the big advertising campaign, under Government auspices, the one single and smashing thought will be economy.

A number of different angles will characterize the campaign. The strongest appeal, however, will be made to the consumer of coal.

Conservation booklets to the extent of 500,000 copies will be distributed in homes where they have steam, vapor, hot water or hot air heating plants. The householder will be instructed in the proper and economical operation of the various types of boilers and furnaces. It is said that this advertising and publicity drive will be one of the most pretentious that any of the Governments at war have ever undertaken.

Coal conservation and steam economy are synonymous. The organized units of the heating trade realized last winter that educational propaganda was necessary in order to impress the public mind with the importance of co-operating with the Government in coal saving.

Steps were taken and without delay to render real assistance in this matter, which is so vitally linked-up with the win-the-war program.

The heating contractors in their educational pamphlets, in which were incorporated rules for firing boilers, rendered excellent service, which was highly appreciated by the Fuel Administration.

Heating contractors knew that 100 per cent coal or steam conservation cannot be secured without efficient heating systems, and that this point requires special emphasis through publicity.

Therefore, in conjunction with the Government's advertising campaign, the heating trade can extend effective and patriotic co-operation by starting campaigns with the slogan of "Remodel the Heating System Now."

Just as the coal dealers are emphasizing the wisdom of "Order Now" in buying coal, the heating contractor can feature the prudence of the "Now" in remodeling or overhauling heating systems.

Heating contractors in Cleveland are carrying on a splendid campaign along this line. The movement is a laudable one. It should expand from coast to coast.

"Domestic Engineering" stands ready to co-operate thoroughly with the heating trade in an advisory capacity and in furnishing attractive copy for newspaper advertising.

The movement merits attention and immediate recognition, because it has a direct bearing upon the plans for speeding the war to a victorious and final end.

Co-operation in this campaign is now highly in order. The trade can render the Government a service essentially constructive and patriotic.

FUEL SAVING HEATING SYSTEMS

How the Vapor-Vacuum System Is Installed— How It Operates and How Fuel Is Conserved

By Alfred G. King

AS an introduction to the discussion of this method of heating we want to say that we think that the conservation of fuel is of even more importance than the conservation of food products. The latter can be produced—grown—year by year, but as soon as the desposits of coal are exhausted, they are gone forever. To aid in every conceivable way in overcoming the useless and preventable waste of fuel should be the "bit" of every heating engineer and heating contractor.

The conditions that now obtain throughout the country relative to the cost of fuel, and the difficulty in getting delivery of it, will no doubt be enhanced as cold weather approaches. These conditions demand the most careful and economical usage of our fuel supply. Such precaution is not only wise from an economical or money saving standpoint, but effective measures of rigid economy are incumbent, for patriotic reasons, on all persons who use coal for heating.

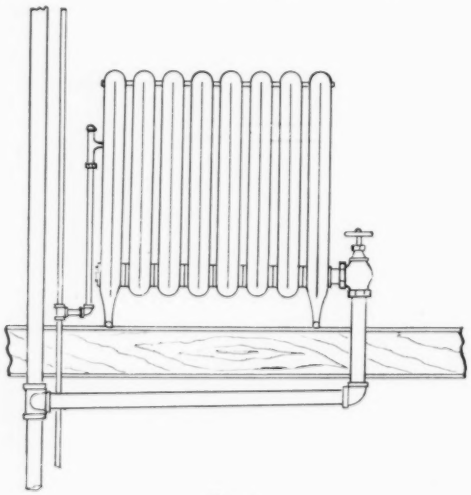


Fig. 1.

Coal is so commonly wasted in all kinds of heating apparatus that it would seem to be up to the heating contractor, who installs such apparatus, to confer with and teach his customers and friends the proper method of firing the heating boiler, and to demonstrate to them that the old out-of-date type of heating apparatus is tremendously wasteful, and show how the modernly equipped heating system saves fuel.

It is safe to say that the majority of those, who are using modern heating apparatus to warm their homes, do not give proper attention to it, or operate it in the proper manner, and therefore fail to obtain from its use the degree of efficiency and economy the apparatus is capable of producing. This leads us to say that, in connection with the discussion of fuel saving heating systems, we shall, at frequent intervals, call attention to some of the prevailing faults, which interfere with efficiency, and suggest how they may be remedied.

Probably the greatest robber of fuel, to be found in connection with a heating system, is the air, which forms in the piping, radiators, or coils of the apparatus, and which never seems to be entirely expelled from the ordinary heating system. Air, pocketing in the piping, interferes with the proper circulation of the steam, vapor, or water, and by lodgment in portions of the radiators or coils renders that part of the apparatus valueless as heating surface. These facts have for many years been recognized by heating engineers, and this knowledge has resulted in the development of a number of heating systems, which, by the use of special devices, expel the air from and keep it out of the piping and radiators.

As we have heretofore stated, in discussing this subject, the common method of circulating steam in a system open to the atmosphere through the air valves, should no longer be used. With a system of this character it is probable that an average of 25 per cent of all fuel consumed is required to keep the system free of air. Practically all of this waste is saved by using modern methods. The more modern systems follow, or make use of, two general methods of removing the air. In the application of these methods the systems are commonly known as "Air line systems" and "Return line systems." The former may be either a one-pipe or a two-pipe system. The latter is distinctly a two-pipe system.

All modern air line systems are vacuum systems of some particular type. At the regular air valve tapping of each radiator or coil a special valve or other device is placed, as shown by the illustration, Fig. 1, and from these appliances small air lines are installed, connecting with a main air line in the basement. This main air line usually terminates at a point near the boiler. These systems make use of a pump, or some other form of exhausting device, driven by steam, electricity or water, the suction of the device being connected to the end of the air main. The air is sucked from the system and the appliance used, whether a pump or other device, maintains a partial vacuum within it. As the pressure of the atmosphere is removed by the sealing of the system, any vapor or steam produced at the boiler flows through the piping and radiators without meeting any resistance, this flow being assisted by the suction or pull upon the air line connected to the return end of each unit of radiation. The water of condensation is returned to the boiler or boiler room by gravity.

It has been determined that the flow of steam in a complete vacuum attains a velocity of over 1,500 lineal feet per second. In a partial vacuum this velocity of flow is lowered considerably, but it is undoubtedly more than ten times that in a system, against which the pressure of the atmosphere is operative through the air valves. Water in a vacuum boils at a very low temperature, and we should

also call attention to the fact that by sealing the system to the atmsophere, even though a very little vacuum is maintained, the temperature of the boiling point is lowered.

Water in a state of ebullition gives off a vapor, and any heating system designed and installed in such a manner as to utilize this vapor, without the necessity of forcing it through the system, is bound to be efficient in service and economical in the consumption of fuel. It has been said that it is no longer necessary to advertise the fact that a vacuum system is superior to the ordinary steam heating system. In the modern system the steam or vapor is "conducted" rather than "forced" through the piping and radiators. Those of the trade, who are interested in improved methods of heating, and their development, or who are installing vapor or vacuum heating apparatus, well know the advantages of using an improved system. For this reason, as we have already suggested, those who know should enlist in the service of conservation and instruct those who do not know or who do not realize these advantages.

The return line apparatus, as the name implies, is always two-pipe work. A return pipe from each unit of radiation carries the water of condensation and the air from the radiators, relieving them through a special trap, valve, or other device, placed at the return outlet of the radiator or coil. A return main, which is installed in the same manner as a dry return, carries both air and condensation, the end being connected to a pump, trap or other exhausting device, located near the boiler. Here the air and water are separated, the air being expelled to the atmosphere and the water returned to the boiler. A return line system may

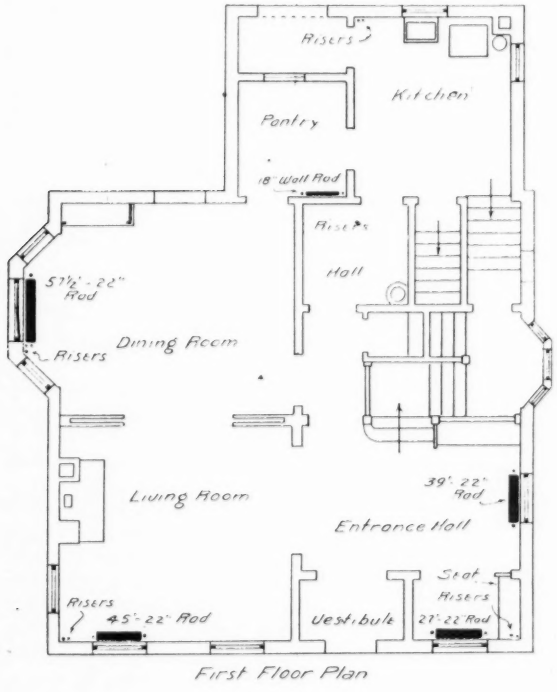


Fig. 2.

be either a vapor system (as we have recently illustrated), a vacuum system, or a combination of the two, called variously vapor-vacuum, vacuo-vapor systems, etc. Some return line vapor systems are frequently designated as "atmospheric," "modulation" or "modulating" systems. The general arrangement of the piping for these systems is the same as for the vapor system recently illustrated. The steam or vapor is circulated at a pressure slightly below or slightly above that of the atmosphere.

In connection with our discussion of fuel saving heating systems we shall illustrate and describe the methods of installation and operation of several of the special or patented

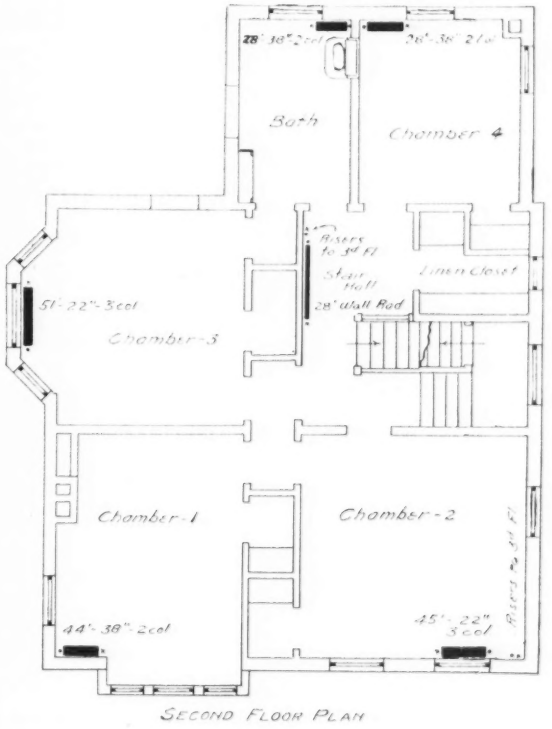


Fig. 3.

systems of heating. It may be well to state that having devised and developed an equipment for accomplishing the results desired, the manufacturers of such equipment are exceedingly anxious that they shall be installed in such a manner as to give satisfactory service, and to this end prefer to furnish working plans for each installation of their apparatus. These plans are valuable to the steam fitter, who erects the work, as with the details given, and with the size of every valve and connection marked, he should be able to install the job correctly in record time.

Floor plans of a small residence warmed by a vapor-vacuum system are shown by Figs. 2, 3, and 4. The Kriebel System is used in the installation of this work. This system makes use of an air trap or controller to expel the air from the system. This is located near the boiler, as shown on Fig. 4, being attached to the ceiling of the basement, and the air pipe from the combined air and water return line is piped up to the controller. Radiators of the hot water type are used, and the supply is connected at the top of one end, so that the vapor or steam entering a radiator will dispel the air through the return connection at the lower opposite end.

In proportioning the size of piping, as indicated on Fig. 4, the flow of vapor to the farthest point of the system is considered, as well as the square feet of radiation supplied. The mains, branches and other pipes are proportioned accordingly. The amount of radiation installed on this job is small and totals but 410½ sq. ft. This is but little more than would be required for an ordinary low pressure steam job for the same building. The reason for installing or

sizing the radiators in this manner is found in the fact that with this system, in periods of excessively cold weather, the apparatus may be operated as a pressure job.

On the basement plan of piping (Fig. 4) the supply pipes are indicated by solid lines, the return line for air and water by dotted lines, and the drips or wet returns by broken

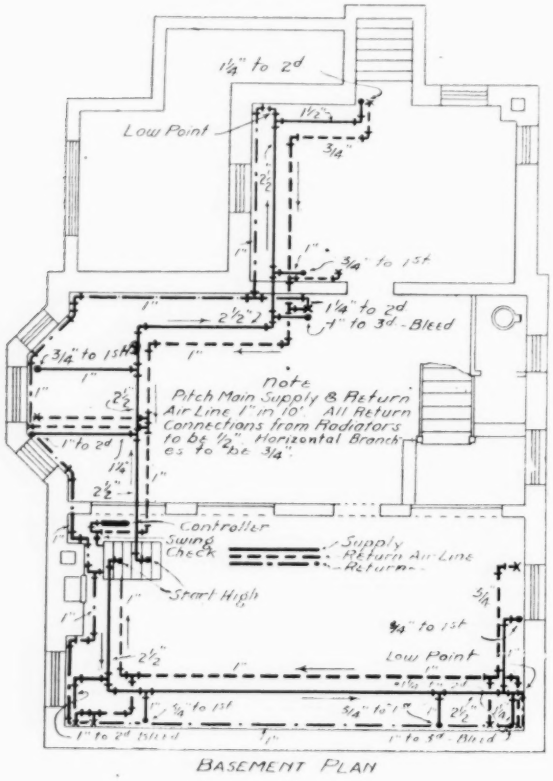


Fig. 4.

lines. On all floor plans the supply risers and supply connections are indicated by heavy dots and the returns by an "x." All radiators should be tapped eccentric on the return end, or eccentic bushings should be used, in order that a water pocket will not form in the bottom of the radiator due to imperfect drainage of the condensation. The size of the flow tapping is uniformly ¾-inch and of the return ½-inch. The supply valves are of the graduated or fractional type, as illustrated by the outline drawing, Fig. 5. Although these valves always have a standard ¾-inch connection, the ports or openings through them are sized according to the sq. ft. of radiation supplied and the distance from the boiler or the position of the radiator on the job. Each size of valve is numbered as indicated on the illustration, Fig. 5, the size of the ports indicating the size of the valves. On the working plan furnished to the fitter, the number of the valve to be used with every radiator is marked in order that no mistake shall be made in connecting a radiator with a valve, too large or too small to admit the proper supply of vapor or steam.

We shall not attempt to discuss the character of the piping for this job, as practically no two jobs are alike in their requirements, and we might therefore confuse rather than instruct. In a general way we may say that with the Kriebel System the main or mains start high at the boiler and pitch from it one inch in each ten feet of length to the end of the line, and at the end of the line a drip or bleeder drops to a wet return. If for any reason it becomes necessary to drip a riser or other connection, the drip is connected to the wet return. The end of a main should be kept at least 24 inches above the water line. Should it become necessary on account of exceptional length or low head room, the main may be relayed or raised to a higher level in the usual manner, in which case it should be extended full size at least 24 inches beyond the point where the rise is made, and the end of it should be connected by a bleeder to the wet return.

The air and return line pitches toward the boiler, this pitch equaling one inch in each ten feet of length. It should be started from the return connection of the most remote radiator and, following the line of the supply main, should be run to a point near the boiler. Into this line the returns from all radiators should be connected. The end of the air and return line should not approach the water line nearer than 24 inches. From the end of it an air connection is made upward to the air controller and downward to the return opening of the boiler. On the horizontal pipe or nipple, entering the boiler, a light weight swing check valve should be placed. Special light weight check valves, with the clapper held in an almost vertical position, are to be had, and this type of valve should always be used on work of this character.

This system is very simple in operation. As vapor enters the radiators, it drives the air into the return line and out of the system through the controller, which acts as a venting device for the system. As soon as heat reaches the controller, the expansion member, which is a brass tube, closes the exhaust opening and shuts atmospheric pressure from the system. As the vapor or steam in the radiators cool, a vacuum is formed, which holds for hours, and any vapor generated by the boiler can flow through the system without interference.

The saving in fuel to be effected, by using a system of the character we have described, comes from the ability to warm the building, in which it is placed, by vapor in mild weather or during the larger portion of the heating season. The advantage of using this particular type of

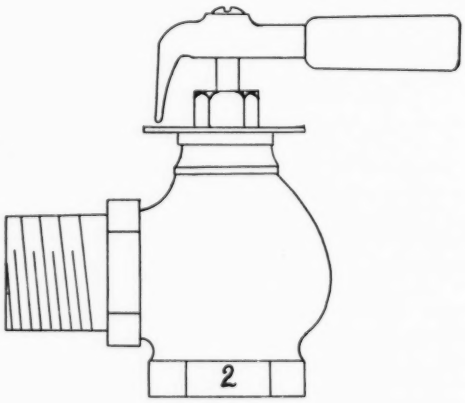


Fig. 5.

system (aside from fuel saving) lies in the fact that no matter how quickly a decided lowering of the outside temperature comes, the apparatus can be used as a pressure system and is quickly responsive to provide for any unusual condition of the weather.

The elimination of air or atmospheric pressure not only makes all of the radiating surface effective, but it also effects a saving in the amount of fuel required for the continued operation of the apparatus.

TRIPLEX PUMPS

A Few of the Different Kinds of Triplex Pumps and How They Work

By John H. Perry

THERE is a great variety of pumps of all classes on the American market. There is the piston type, the plunger type, the rotary type, the centrifugal type, the screw type, etc., etc.

Each type may be sub-divided into many different classes, and each class again may be divided into different kinds.

In fact the pump question is a very broad one. Each manufacturer has his own particular designs and forms, and each gives more or less satisfactory results. The efficiency of a pump and the general satisfaction it gives in service depends not only on the pump itself and the care which the manufacturer exercised in its making, but also in the choice of the right kind of pump and the intelligence and care exhibited by the contractor who fits it up.

An excellent pump can be quite useless on a job, if sound judgment has not been exercised in its choice or care has not been taken in its installation.

But things like that are not what we wish to talk about at present. We will confine ourselves to one particular kind of pump—the triplex.

This is a very common type of pump, which has given general satisfaction where properly selected and correctly connected.

Triplex pumps are called "triplex," because they have three cylinders. The word seems to be derived from the Latin word "tres" which means three.

It's strange how so many technical terms are derived from the Latin.

The Latin for one is "unus": in mechanics we talk of a unit, meaning one thing—such as a pumping unit.

The Latin word for two is "duo." We use this also in mechanics. Thus we say a double acting pump, which means a pump with two modes of action.

And so the word "Triplex" tells us that there are three actions to this form of pump.

Generally speaking, there are three cylinders in such a pump. They may be provided with a piston, or a plunger in each cylinder, according to the character of the work to be performed by the pump.

Probably the most common form of triplex pump is of the plunger type, and it is most generally used for shallow wells or where there is a pressure above atmosphere in the suction pipe.

The mechanical motion of triplex pumps may vary with different manufacturers, but the general principle is exhibited in Fig 1. The plungers are indicated by dotted lines at A, B, and C, in the side view. They slide up and down in their respective cylinders, D, E, and F. The spaces G communicates with both the suction and discharge chambers of pump, which are not shown here. There is a suction valve and discharge check valve at pump for each cylinder. These are not shown. The suction valves all open from suction pipe toward chambers G. The discharge valves all open from chambers G toward the general pump delivery pipe.

It is thus evident that an up-and-down motion of each plunger will draw water into its own cylinder and discharge it into the general delivery pipe separately from the others.

In fact the combination is really composed of three separate single action plunger pumps, which draw from a common suction line and discharge into a common delivery line as three separate units.

But the motion of the plungers are synchronized so to speak. They can never all go in the same direction at the same time. When one is pushing down another is pulling up. And when any particular one is on the "dead center," there is always another one pushing the water into the delivery pipe. The end view in Fig. 1 makes this plain.

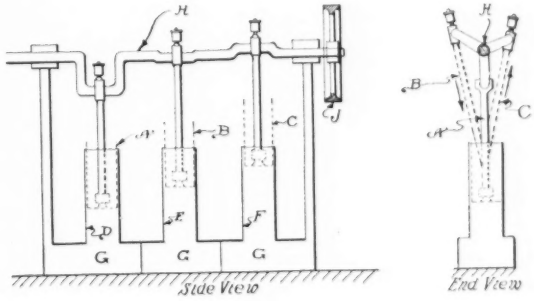


Fig. 1.

It will be observed that the plungers are all connected to a shaft, H, with a crank and connecting rod motion. Suppose the plunger A is at the bottom of its stroke. Then the crank, rod and plunger are lined up straight, as shown in Fig. 1, end view. In this position, plunger A is not pumping any water.

Now look at plunger C. It is on the up stroke. It therefore is not pumping water into delivery pipe. It is only drawing water into cylinder from the suction pipe.

At this stage of the revolution of the crank-shaft, the plungers A and C are not pumping water. But it happens that the cranks on shaft are bent in such shapes and in such positions that plunger B is descending, consequently, this plunger is delivering water.

By the time plunger B reaches the bottom of its stroke and ceases to pump water, the crank of plunger C has gone over the top, and plunger C therefore has fairly started on its down stroke. It is C's turn now to deliver the contents of its cylinder into the discharge pipe. While it is doing this the plunger A is rising, so C is the only one that is now pumping. When C reaches the bottom of its stroke, plunger A has gone over the top and has started to deliver water on its down stroke.

It is evident that, although there are three plungers in the make-up of this pump, only one at a time is really in active pumping action. The end view in Fig. 1 seems to make that point plain. That synchronization of motion is the thing that makes it possible for a triplex pump to deliver a steady stream and to utilize the power in a steadily absorptive manner.

This spells high efficiency in mechanics. It is just a steady

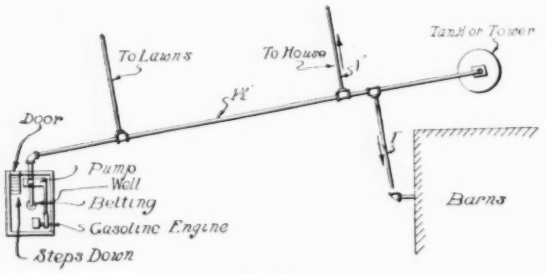


Fig. 2.

load and a steady pull. Such a pump, therefore, should work very smooth, very easy, and in a quiet kind of way, if the valves are all right, and the pump is otherwise in good repair.

Fig. 1 is only a diagram to illustrate the crank motion with relation to the plungers. A pulley, J, is shown attached to end of crank shaft. This is intended to be belted up or otherwise connected to some kind of motor.

The motor may be an oil engine, a steam engine or an electric motor. But whatever it is the pulley, J, must be proportioned with relation to the motor pulley so that the desired number of revolutions per minute of crank shaft will be obtained.

Water pumps cannot be speeded up as fast as gasoline engines. They must run with a comparatively slow motion.

It is common practice, for instance, to run the small sizes of pumps at 100 to 120 revolutions per minute. This means pumps having pistons not exceeding 2 inch diameter. Pumps with pistons up to 3 inches diameter may be run as high as 110 revolutions per minute, providing the length of stroke is not more than 3 inches.

If the stroke is 4 inches the speed will probably have to be cut down to 90 revolutions per minute.

These pumps are adaptable to varying maximum working pressures. Some may be recommended only for 125 pounds maximum working pressure, while others are guaranteed to work under a maximum of 400 pounds or more. It depends a great deal upon the combinations of piston areas, length of strokes, diameter of pulley, the motive power, and the back pressure, against which the pump has to work.

Generally speaking the pump pulleys may be about as follows:

A 24-inch by 3-inch pulley for pump with 1½-inch plungers. A 42- by 3-inch pulley for pump with 2 to 3-inch diameter and plungers with 3-inch strokes. A 48 by 4-inch pulley for pumps whose plungers are 3 to 3½ inch diameter and 4-inch strokes. These may be good ordinary practice for single acting triplex pumps, but certain existing conditions of service may warrant slight changes from these dimensions.

In the pumps referred to, that with 1½-inch plungers may have a 1¼-inch section and a 1-inch discharge pipe, as it only discharges about 5 gallons per minute. That with 2-inch diameter plungers and 3-inch stroke, however, may have a 2-inch section and 1½-inch delivery pipe. A 3-inch plunger and 3-inch stroke, which is a slow motion pump, may have a 2½-inch suction and 2-inch delivery pipe. These latter pipe sizes are generally large enough for a 3½-inch diameter plunger pump with 4-inch stroke, and 90 revolutions per minute, if the pipes are short, and maximum working pressure does not exceed 150 pounds per square inch.

It has been stated that triplex plunger pumps are believed to be generally used as shallow well pumps. They are built to be best suited to this kind of service. When they pump water, the plunger rods, or connecting rods, are subject to compression. They are under tension only when the plunger makes its up stroke and is lifting from the well. These plunger rods are short. They cannot bend or buckle, as they might do if quite long.

Fig. 2 shows by general plan, a single acting triplex pump installed, say, on a farm, to pump water from a well and deliver it to a tank on a tower, or to a pneumatic pressure tank, under ground or in basement.

It is assumed there is no electricity here to drive our electric pump motor, so an oil engine is used.

Possibly the tank may be a discarded windmill tank. The mill has been removed for some reason, perhaps because it did not give enough water during ordinary calm weather. A positive oil engine is used in its stead.

A pump house, or rather pump cellar, is built over the well, the floor being down, say, 6 feet below grade, and the walls of pump house banked up to prevent freezing of pump. Steps lead down to the pump. The engine is set at one end of pump house, the pump at the opposite end, and the well in the middle. A belt is run between engine and pump, the belt being, say, 12 feet long, or more, making the pulleys about 5 feet centers or more.

The pump may have 2-inch diameter plungers with 3-inch stroke, assuming that the quantity of water required is at the rate of, say, 10 gallons per minute, which is not much.

The revolutions will be about 100 per minute. The suction pipe will be 2-inch and the discharge pipe about 1½-inch. The surface of water in well should be within 25 feet of pump plungers. A gate valve and check should be placed on discharge pipe inside pump house. A 1-inch water relief valve, set to blow off at, say, 100 pounds, should

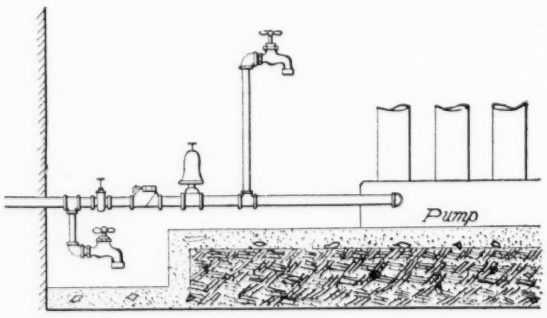


Fig. 3.

be connected to discharge pipe between pump and gate valve, something like Fig. 3.

It is also a good plan to leave off a drain cock at tank side of gate valve on delivery pipe in pump house. In fact, it is a good plan also to place a ¾-inch hose bibb on delivery pipe between pump and check to draw fresh drinking water direct from well for table use when desired.

This latter draw-off faucet is very handy in case of a fire. The gate valve on discharge line can be shut. A garden hose can be connected to this faucet. The pump can be speeded up, and the full pressure and capacity of the pump can be directed exclusively on the fire.

(Continued on Page 306.)

LEGAL QUESTIONNAIRE

*Is Plumber Liable for Injury From Accident to Employee of Owner, Where Owner Has Settled for a Certain Amount? —Is Wife Working for Husband as Bookkeeper Entitled to Benefit of Workmen's Compensation Act? — These Questions Are Answered in a Most Careful Manner**

By "The Judge"

Liability for Injury from Accident to Employee of Owner, Where Owner Has Settled for Certain Amount.

Editor "Domestic Engineering":—While connecting a house with the street it became necessary, recently, for me to dig up the lawn for an owner. The trench we dug bordered on a driveway, and at certain places was within the bounds of the driveway. The housemaid of the owner, while picking flowers for the dinner table, and while she was upon the driveway, claims that she fell into the excavation, which was not guarded at the time, and that she did not know of the excavation at that particular point. It was fairly dark at the time. One of my men had asked the owner's chauffeur to put a light at the excavation, and the chauffeur had agreed to do so.

The owner has paid the housemaid some $500 and has secured from her an agreement not to sue him. Will it be better for me to make a settlement or shall I fight the housemaid's claim for damages?—F. D. G.

While I can give you the general principles of law, covering your situation, if the claim against you is considerable, I should advise going over the matter more in detail with an attorney.

The fact that the owner has paid the housemaid something and secured a release running to him, will help you, if the damages suffered would amount to more than $500. If the release was given in such form that you could come in under its advantages, it would relieve you entirely, but as it probably was not, and you were not a party to it, it could only serve to lessen your liability to the extent of $500. If the housemaid is entitled to damages, she can successfully sue all who contributed to her accident, but she is entitled to only one satisfaction of her claim. That means that if she should recover a verdict of $1,000 from you and she had received $500 from the owner, who was also responsible, she could collect but $500 of her $1,000 verdict against you. The courts hold that she could not recover from all parties an amount in excess of her damage. Now we will take up the matter of your liability.

When you were doing the work, you were what is called an "independent contractor" and were bound to use reasonable care to guard the work and protect the employees of the owner from harm. If the driveway was designed and used for travel, it follows that you were bound to anticipate that the excavation was a source of danger to persons walking thereon and to provide against what was likely to happen. The strength of the case against you will be great or small, depending upon whether the housemaid knew, and it can be shown that she knew, of the excavation at the particular point. The fact that it was rather dark is against you, as it goes to show that the housemaid was not careless in falling into the hole. The housemaid stands in the shoes of her employer, to a great extent, as regards her rights.

The fact that one of your men thought that the chauffeur would do, as he said he would, and place a light at the excavation does not help your case any. An independent contractor cannot relieve himself of responsibility by delegating a duty to the employee of another, where that employee has no authority to relieve the contractor of a duty, which he had assumed. Other than the request of the chauffeur I assume that the owner had no actual knowledge that the excavation was being left unguarded.

The question as to your best course to pursue in this matter is much harder than stating the general principles of law. The successful settlement of accident claims is an accomplishment that comes only with long experience and then only when all the facts can be gone into with witnesses. If the housemaid was not badly injured and $500 has been paid to her, I believe that a small settlement would be cheaper for you in the end. If the injury to her was of a serious nature then it is a matter for an attorney to decide whether to pay or take a chance of a verdict. Of course, if you are insured against such liability, all you will have to do is to turn it over to the insurance company for settlement or trial.

Employer's Liability to Person, Who Has Been Injured Through Negligence of an Employee Under Influence of Liquor.

Editor "Domestic Engineering":—One of my men, while driving my truck to a job, ran into and injured a boy of about eight years of age. My man had had a drink or two, he admits, and another of my men, who was on the truck, says that they were going pretty fast, and that the driver was really to blame. The driver claims that it was not his fault, and that, what the other man says, is the result of a personal feeling between the two. Am I liable under the circumstances, supposing that the driver was at fault? Must I pay because the driver was under the influence of liquor?

—K. B.

The relationship between yourself and your driver was that of master and servant. This relation exists, to put it

*Every Effort is made to the End that these Answers may be authoritative. However, we cannot assume any Responsibility because of the very Nature of the Service, which is rendered without a personal Interview.—Editor.

briefly and generally, where the employer selects the workman and may remove or discharge him, for misconduct, and may order not only what work shall be done but the mode and manner of performance. The power to control the servant is the test of the existence of the relationship.

You are liable for the injury done to another by your servant, committed by him while acting within the scope of his employment, and in furtherance of it, although you did not authorize it and even if you had expressly forbidden the wrongful act. The great question which arises in many such cases is whether the servant was actually upon the master's business at the time of the accident. It is not every deviation from the strict prosecution of his duty that will relieve the master from liability. Thus, if your man had been driving a roundabout way to his destination, to suit his own convenience, it would probably be held that he was nevertheless acting within the scope of his employment and was upon your business. But if, for instances, he had for the time being discontinued your business to go a different way so that he could drop into a saloon for a drink, he would probably not be held to be upon your business. After he had had a drink and resumed his journey it would then be a question of fact for the jury as to whether he had not again become employed upon your business.

Even wilfully wrong acts of a servant may make the master liable, if it can be shown that they were done in furtherance of the master's business. Excessive speed, in your case perhaps, would probably be construed as a furtherance of your business.

Your liability in this case differs from the liability of a principal for the wrongful acts of an agent, in that the third person, who is injured, need not have any knowledge that you and your man are related as master and servant. If you hire a man to sell insurance for you, you would bear the relation of principal and agent, and anybody dealing with the agent would be bound, as far as you are concerned, by the terms of the agency which actually exists, in so far as the terms are not contrary to the general rule in such cases; and you might not be liable for acts of the agent under such circumstances. The test is that the servant was acting for your benefit. The reason for this rule has never been entirely clear, but it is nevertheless the fact and is founded upon years' of court decisions. A very eminent jurist has declared that "This rule is obviously founded upon the great principle of social duty, that every man in the management of his own affairs, whether by himself or his agents or servants, shall so conduct them as not to injure another; and if he does not, and another thereby sustains damage, he shall answer for it."

It used to be the rule that a master would not be liable for the malicious acts of his servant, as distinguished from his neglect, unless the act was done pursuant to the master's express orders or with his assent, notwithstanding that it was done in the line of the servant's duties. It is now well settled by court decisions, however, that the master is liable for wilful and malicious acts of his servant, where they are done in the course of his employment and within its scope. On the other hand, where the servant does a malicious or wilful act, while engaged upon his master's work, but outside of his authority, as where he steps aside from his employment to gratify some personal grudge, the master is generally not liable. Of course, such crimes as murder or larceny, which are not within the scope of the servant's employment and are not sanctioned, would not make the master liable. The fact that your driver was under the influence of liquor would not relieve you of liability, as I understand the facts.

It seems to me that about the only hope you have got in this case is the fact that the eight-year old boy may be found to have been negligent and thus relieve you because of his own negligence. The general rule is that an infant of tender years is deemed in law not to be possessed of sufficient discretion to make him guilty of negligence for failure to exercise due care for his own safety. While the law has prescribed no definite age, at which a child must arrive before it can be charged with contributory negligence, practically no cases are found which hold that a child under six years of age can be charged with negligence. The general rule, also, is, that children of seven years or more may be charged with contributory negligence, and children of fourteen years, or more, are presumtively chargeable. If you can show that the boy was negligent, as well as your driver, you have a good chance to win the case.

Wife Working For Husband As Bookkeeper Not Entitled to Benefit of Workmen's Compensation Act.

Editor "Domestic Engineering":—In my gasfitting business, my wife assists me as clerk and bookkeeper. A short time ago she was in the back part of the shop and was injured when a length of pipe fell on her foot and was laid up for some time. I carry compensation insurance. Could my wife successfully make a claim for compensation under the Workmen's Compensation Act?

L. G.

Answer:—In your state and in all other states, where common law or statue provide that a husband and wife cannot contract between themselves, your wife could not successfully make a claim for compensation under the Workmen's Compensation Act.

The main question involved is whether a wife can be an employee of her husband. Obviously she cannot be an employee without a contract, and a married woman, in almost all states, cannot contract with her husband. The statute reads, with regard to the meaning of employees under the Act: "Employees shall include every person in the service of another under any contract of hire, express or implied, oral or written," with exceptions that are not material here. Even though the contract of hire is a vague and indefinite one, it must nevertheless be some sort of a contract.

This rule is carried to the extreme, in your state, of holding that a wife of a partner cannot make a valid contract with the partnership, although the husband may be one of several partners. It has even been held that where a wife is working for a partnership, which her husband afterwards joins, her contract with the original partnership is ended when her husband joins the firm.

This rule of law, which prevents a wife and husband from making a contract between themselves, is of long standing; in fact, in the olden days a woman could not make a contract with any one. Of late years there has been a great change in this respect. Some states do not allow a husband and wife to convey real property from one to the other without the intervention of a third party as a conduit. Woman suffrage will undoubtedly make further and more radical changes in the status of a woman in the eyes of the law. But, probably, with the advantages, which she receives, she will have to assume obligations, which she now escapes.

Heavy.

"My daughter is going to Professor Wombat, the eminent pianist."

"How's his touch?"

"Pretty strong. Four dollars a lesson."—"Kansas City Journal."

QUESTIONS & ANSWERS

TWO SINGLE-CONNECTION STEAM RADIATORS.

Editor "Domestic Engineering":—The following experience with two single-connection steam radiators will no doubt prove of interest to many readers of your valuable publication.

The illustration, Fig. 1, shows a large steam radiator with one connection only, that proved a failure in practice. The inlet pipe was large enough to give satisfactory results under proper conditions, but it was not fitted with a drip pipe, hence when the thermostat turned air pressure on to the automatic steam valve, thus closing it, water collected in the horizontal pipe below this valve. This pipe may have pitched towards the radiator. When the steam valve was opened again, much water was discharged into the radiator, and as some may have leaked past the valve, while it was closed, the result was a combination of noises that could not be tolerated.

The illustration shows an independent air valve, as it is not provided with a drip pipe to carry off any water that was forced into it by the above mentioned arrangement of piping. When a drip pipe was provided below the automatic steam valve, the result was satisfactory, as only dry steam was admitted, and when water resulted from condensation of steam in the process, it flowed back through the inlet pipe to the return pipe.

Fig. 2 illustrates a single-connection radiator that is properly connected, hence gives satisfactory results. The steam supply pipe is continued under the radiator, as shown, and discharges into the main return pipe in the basement. This end of it becomes a drip pipe, and as it is fitted with a

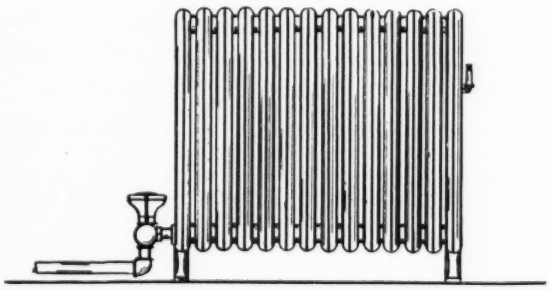


Fig. 1.

check valve, water cannot be forced upward through it into the radiator. This is more simple than where an automatic thermostat valve is provided on the outlet pipe, and it gives good results in practice.

The outlet of the air valve is piped to an air line system that extends to the basement, thus making it impossible for water to be discharged on the floor, even if the air valve fails to work properly.

This arrangement of piping results in a constantly hot supply pipe, which would be an objection in some cases. This may be overcome by using a plain ell, where the automatic valve now is, and locating the latter on the inlet to this horizontal pipe. In this case dry steam is always ready to be admitted, as soon as the valve opens, and any water that may have been in the radiator has a chance to run back into the feed pipe and find its way into the main return pipe, while the radiator is shut off. In one of the buildings of my plant, three large radiators are supplied from one steam pipe, with connections made as above described, and only one

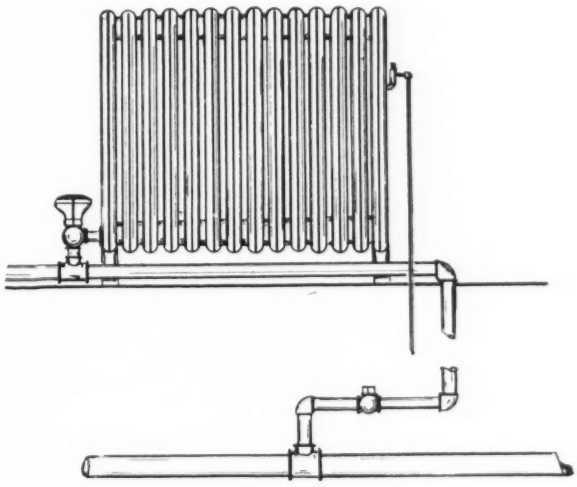


Fig. 2.

automatic valve is required for each set of three radiators. The operation is very satisfactory, and complication is reduced to a minimum. The air line is connected to a vacuum pump in the basement, therefore all air is kept out of the radiators, while steam is shut off. This feature is mentioned because it is not always appreciated by engineers, but it is valuable in practice.

New Haven, Conn. W. H. Wakeman.

"STICK TO YOUR JOB."

"Stick to your job," is the advice of the Ohio War Board in a circular in which it says:

"America's man power is needed to its utmost. We cannot afford to waste an ounce of energy.

"This is the reason for the Government's plan to mobilize American industry; to induce employers to get their help and employes to get their jobs through a central Government agency—the United States Employment Service of the Department of Labor.

"The Government is not drafting labor; it wants to call for volunteers. Until you are asked by the Government to make a change stick to your present job, no matter where it is, and work full time.

"Two million of our best and strongest men have gone into the fighting forces. They are not producing wealth for us to consume, but they, themselves, must consume."

BUSINESS INSURANCE

How a Plumbing Contractor Was Brought to See the Necessity of Advertising, in Spite of His Large and Flourishing Business

By William Robert Marshall

I MET an old friend on the street the other day, and, after the usual "howdedos" were over, he remarked: "Well, William, you have changed your business."

"Not exactly," I replied: "I have only changed the 'theater' of my activities as I see it."

"You can call it changing the 'theater,' if you want to, but, as I see it, you have also changed the whole blame show," he replied.

"Not at all," I assured him. "The reason you think that, is because you do not exactly understand just what kind of work I do."

"Selling plumbing goods and selling advertising, to my mind, is some change," he answered. "Anyway it lets me out. I'm off your list. I don't use your make of goods."

"You never used vitreous china tanks until just a few years ago, and now you install them every day. Don't you?"

"I don't get your line of argument. I don't advertise and have no use for it," he assured me.

"So you think I haven't got anything in my catalog that will get your money—hey?" I asked him.

"Absolutely not!" He was very positive.

"Do you know you are 'daring' me?" I laughed.

"Yes I 'dare you!" he almost shouted.

"All right, I accept the 'dare.' When will be a good time for me to come out and have a good chat with you?"

"This is Monday, suppose we say Wednesday afternoon. I always enjoy your calls any way."

"I'll be there with my 'gun' loaded," I told him, and I was.

* * *

"Now then, William," he began, "I don't want you to labor under any false impression. I am not interested in advertising and do not intend to spend any money on it."

"I understand your position exactly" I assured him, "and I also know that you will do anything—even to spending money—to safeguard this business of yours." I added.

He gazed at me perplexed. "Open up the 'catalog,' boy,—open up the 'catalog'" he retorted.

"What are you doing to get the business you now have?" I shot at him by way of a reply.

He laughed.

"Wait a minute, wait a minute," I pleaded.

"Let's get at this thing from a new angle! Let's pretend that you know me only by a supposed reputation. You have never met me, but have heard about me as a man, who has helped some of your friends or acquaintances with their business problems. You haven't any problems we will say—or better yet—you don't believe you have, but you are going to take a chance. You are curious to know just what I would say to you about your business and you, being well able to gratify that whim, have sent for me."

"Very well, now that you are here, Mr. Marshall, what can a man in your position do to help me in mine," he replied with mock dignity.

"You are in the plumbing business—*what are you doing to get the business you now have?*" I repeated to him.

He scratched his head, frowned and then stammered: "I have been here for ten years, and five years before that in the block just below this one. Everybody in this neighborhood knows me.—I watch the building permits and have two men out as estimators, and I am well known in the building industry,—get a chance at everything, we believe is worth while."

"So is Wrigley, but he doesn't let up telling the ——." I stopped, I saw at once he didn't like that argument; chewing gum and plumbing had no kindred thought in his mind so I started on another "lead."

"You have a good business, perfectly satisfactory to you?

"Yes I have a good business, perfectly satisfactory, but we could do more on the same overhead, and we would get it if the business was here to get. We consider ourselves very fortunate to be in the position we are." He said it sincerely. He meant every word of it, and every word of it was true.

"What was the amount of your last stock inventory?" I asked.

"About twenty thousand dollars," he replied.

"You carry insurance on it to the limit?" I presume.

"Certainly!"

"What was the amount of business you did last year?" I quizzed.

"We usually make a 'turnover' every three months—say eighty thousand dollars," he answered.

"You carry insurance on it to the limit?" I shot at him quickly."

"Insurance! insurance!" he sputtered. " What do you mean?"

"I mean, I suppose you insure that eighty thousands dollars worth of business to the best of your ability," I answered.

"I don't just understand what you mean," he replied.

"I mean, just this: You have two estimators out looking for work. You have an established business and an established place from which to conduct it,—and a good reputation. That's about as far as your activities go; isn't it?"

He scratched his head. "I guess so, what else could I do?"

"Just a minute!" I begged.

"You say you have been right in this neighborhood for fifteen years?'

"Yes."

"All right, how many competitors have you in—say—a mile each way?"

"About three or four," he replied as a guess.

"As a matter of fact you have six," I replied and I proved it to him.

"All right, go on. "He showed signs of being interested.

"How many had you fifteen years ago?"

"One—old man Schellanthaler," he replied.

"What has been the increase in population in this neighborhood in the past fifteen years?" I quizzed him.

"Oh come now, Marshall, I get the drift of your argument, but don't compare the increase of my business from fifteen years ago with the increase in population and increase in competition. It isn't fair, I get my share, and I am not afraid of my competitors. You will have to show me something better than that in your catalog."

"I have it and am going to show it to you shortly. I wanted you to think about your business from a little different angle than usual—that's all. You don't, as a usual practice, give your business much thought along the lines I have been quizzing you about. Do you? Well my advice is that you take a little time and analyze your *present business* with its *future possibilities.*"

"Thank you, William, thank you, but I am not really as much of a mutt as you are trying to make me out to be."

"As to that," I answered, "You are going to be the judge. I am going to presume now that you are perfectly satisfied with your business. That means that you are not going to spend a cent to stimulate it. You are going to be perfectly satisfied to take the natural increase or decrease, according to the city's increase or decrease in building activities.

"That's nice" he assured me a trifle sarcastically.

"What I am interested in right now—more than any other thing is what are you doing to insure the $80,000 worth of business you are now doing?"

"I bite," he snapped, "open up the catalog."

"You have two estimators; one has been with you five years and the other one about two. How many of the architects and builders, *do you know personally?*"

"All of them," he replied quickly.

"I suppose you have made a personal call on every one of them during the past ninety days?"

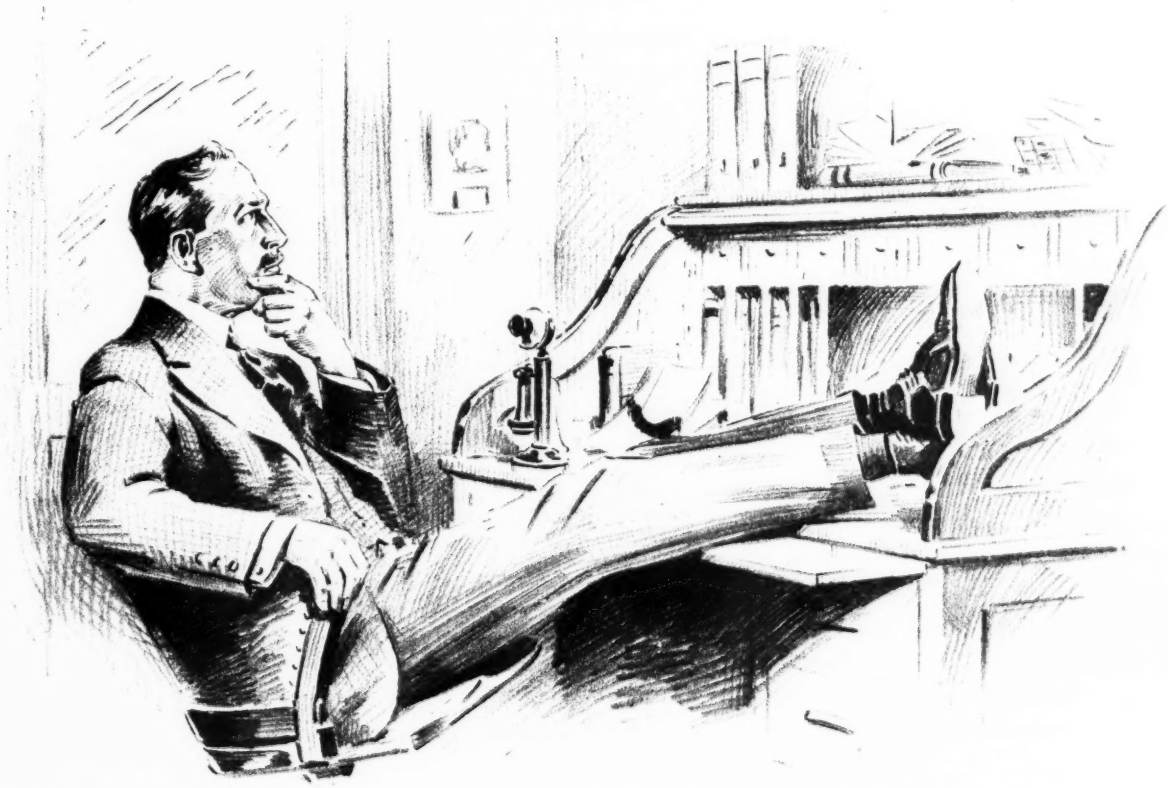
"Certainly not. How do you suppose I would have time to call on every man I knew in the business every ninety days?"

"I didn't *suppose* you did. In fact, I *know* you didn't. You leave that to your two representatives."

"Certainly."

"You have a great many friends, and you just leave them to chance to remember you, whenever they need any plumbing."

"Certainly."



Go Into the Office and Lock the Door. Put Your Feet Upon the Desk and Think—Think: "What Am I Doing to Insure My Business Against Chance or Accident?"

"You have a nice place of business here, very representative of your business, and you leave it to chance that some 'passer-by' will notice your place and immediately know that you are an old-established plumber, with an enviable reputation, and will remember to come in, whenever he, she or it, may need any plumbing work done. If the people on the other end of the block of any of the adjoining ten blocks take the street car on the two streets, paralleling this one, you lose."

"That's right, son, dead right," but his voice had lost some of its levity.

"If," I continued, "either of your two outside personal representatives happen to die or move, of course, you are so well known that the men they have been calling on for years will remember *you* so well, that you will get the business just the same."

William you are trying your darndest to make me believe I am a very poor businesss man," he finally protested.

(Continued on Page 305.)

The DAY BOOK *of the* BON TON DE LUX PLUMBING & HEATING CO.

Hank Olson and Jerry Dolan Formed a Partnership and Opened a Plumbing and Heating Business January 1, 1918 —Dolan Has Decided to Keep a Day Book, in Which He Records the Interesting Happenings of the Day

(Continued from Page 206 in the August 10th Issue.)

August 10, 1918.

We been fixing up the show window a little. We took out a lot of brass stuff that was in the window, and we put in a nice kitchen outfit, all painted in white, and with a background of United States flags, and it looks like the real goods.

August 11, 1918.

Sunday. Mrs. Dolan and I were invited to visit Camp Bughouse on the Minnesota River, and so we went down there, and this George Andrews, who used to be a plumber, but graduated, was chief cook, and he done a good job of it, and then we got in his motor boat and took a ride up the river. It was some day.

August 12, 1918.

There is one place where most plumbers fall down, and that is in the matter of collections. Most of us can get jobs, and we can do them, but we hesitate when it comes to asking for our pay. In learning the trade a fellow ought to have a course of instruction in collecting, as well as in joint wiping. Me and Hank been getting after most of them, but every once in awhile we run across some bird that is long on promises and slow on cash, and it means running after him time and again, until he gets tired of seeing a fellow come around, and then he pays up, and Old Man Flannigan tells me that he has given some of his accounts to these professional collectors, and after they get the money from the customer, you have to get another collector to get the money from them, and so that don't pay, but some of the doctors been telling us about the fellow that does collecting for them, and he goes after the coin like a Yank chasing a Hun, and the best of it is that he settles with his clients every day that he gets any money for them, and so me and Hank made out a list of about a dozen accounts, and we turned him loose on them. He charges 25 per cent for collecting and makes no charge at all, if he doesn't get the money.

August 13, 1918.

We were out on a little repair job today, and while there they asked us to clean out the heater and put it in shape for winter, and the lady said that the draft was not very good, and we found that some bird with a No. 6 head had evidently put up the smoke pipe, because there was a 9-inch pipe leading from the heater and it was reduced to 6-inch at the chimney. I suppose the brick mason left a 6-inch opening in the flue, and it was easier for the fitter to have a reducer made than it was for him to increase the size of the opening in the flue. It looks like the fellows that call themselves plumbers and fitters would know pretty soon that when a boiler manufacturer puts a 9-inch collar on his heater that he wants a 9-inch connection to the flue.

August 14, 1918.

I was talking to an old time plumber, and he was telling me that the cubs, or apprentices, of the old days, used to put in a whole lot of time shining up lead pipe to make it look like block tin pipe, and then I suppose they charged the customer for block tin pipe, and that's one thing that the plumber of today has to live down.

August 15, 1918.

This is the one day in the month that I would like to be in the supply business and not have anything to do all day except take in the money, and then haul it over to the bank.

August 16, 1918.

Me and Hank been thinking about how the supply houses get their money from the plumbers the fifteenth of every month, and it seems like there ought to be some way for the plumber to get his money from his customers a little quicker. Everywhere you go now, it's "cash and carry." The garages and filling stations are doing business for cash; the fuel dealers make a fellow pay in advance; the welding concerns are on a cash basis, and some of the able men in the plumbing game ought to be able to figure out a way to put this business on a cash basis. I'll bet it makes a fellow feel pretty good to be in a cash business, and to know that, when he locks the door at night, he either has the cash or the goods, and no customers' accounts on his books.

August 17, 1918.

It's interesting to see how people consider sanitation now. There is a big part of our city that never has had sewer mains and connections, and when the city wanted to sell some bonds last spring, so as to be able to extend the sewer main out our way, the Capital Issues Committee said: "Nothing doing." But a couple of the aldermen went down to Washington, D. C., and showed them that this sewer extension was necessary as a health measure, and so they let it go through, and before long those people out there will be able to connect to the sewer mains and do away with their cesspools. Hank says that twenty years ago you couldn't have gotten a committee to go to Washington for any such purpose, and, if they had gone, they wouldn't have gotten any satisfaction.

August 18, 1918.

Sunday. We went out in the country and visited some of the relatives, and we picked a great big bag of apples, and Mrs. Dolan is going to make apple butter of them.

August 20, 1918.

On the 15th we sent out some statements to some people that forgot to mail us checks on the 10th, and it worked fine. About half of them have mailed in checks, and some

of the other half called up to say that they would be in before the end of the month. Those reminders don't cost much, and they sure do the business. The collector is doing business too. He pried a few dollars away from some of those hard shells, and every morning now we are on the lookout for his blue envelope, because every one that's come so far has had money in it.

August 20, 1918.

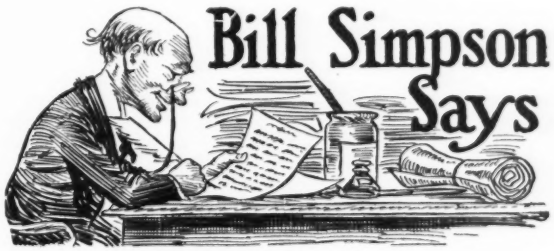
Some of the invoices that we get from jobbers and manufacturers look like a "Child's History of England." They start out by stating that "Goods are shipped at consignee's risk; our responsibility ceases on delivery to the railroad company; claims for errors or overcharges must be made upon receipt of goods; all accounts past due subject to sight draft; make remittance by bank draft on Chicago or New York; interest charged on overdue accounts; goods must not be returned without our permission; returned goods subject to discount; no claims allowed for labor or damage; goods proven defective in manufacture will be replaced, if claim is made within ten days from date of shipment." Just think of it. All of that information and advice at the top of an invoice issued by a manufacturer, occupying a building possibly 40x150 feet and two or three stories high. Right off the bat, he places the goods at the purchaser's risk and disclaims any and all responsibility; errors must be found and reported at once; he retains the right to draw, if the coin does not come thru quick enough; and if it does come by mail he wants it to come clean, so he will not have to pay any exchange, altho I'll bet a hat there are 20,000 master plumbers in the United States who would be tickled to death to pay exchange, if they could get their money with no greater expense than that. He wants to charge interest if the draft is not successful. The reference to returned goods makes a fellow think that all master plumbers order goods just to make the salesmen happy and then go down to the freight house, when they come in, and have them shipped right back. I guess there is not very much stuff returned, unless there is a pretty good reason for doing it. And of course, if you return stuff it is subject to discount. A while ago, we had a hurry up repair job on a fire line. A valve under ground was broken and had to be replaced. We couldn't find out whether it was a 1½-inch or a 2-inch valve, and as it was close to noon on a Saturday, and they wanted an extra heavy valve, we had to buy one of each size, and then on Monday we returned the one we didn't use, and it cost us 10 per cent., but our customer paid it, because it was in his bill, but he didn't see it. And they won't allow a fellow anything, if he gets a poor article and has to replace it, when most likely the replacement cost is greater than the cost of the goods. And finally he agrees to replace defective goods, if claim is made within ten days from date of shipment, and the chances are that it takes at least 20 days and maybe 40 days for the goods to make the trip, so the plumber stands a fine chance of making a claim within ten days.

August 21, 1918.

And on the other hand, we had a chance to make a little money by selling a bunch of gas ranges to an apartment house, and we got an invoice from them minus that description of a Cook's tour of Europe, but with a picture of their plant showing that it covers 15 acres, and as luck would have it there was a broken door on one of the heaters when it got here, and so we ordered another one to replace it, and they write us as follows:—"We note that door is to replace one broken in transit. If you will send us freight bill we will be glad to file a claim for you for the value of the part, transportation charges, and a reasonable amount to cover your expense in connection with the repairing. Our claim department has been of helpful service to many of our customers, and we assure you of our best attention to the claim."

August 22, 1918.

Some difference there between the plumbing manufacturers and the stove makers. Getting a letter from that stove concern makes a fellow feel that they are real honest to goodness people, and in a big concern like theirs it is possible for them to clean up those little damage claims with the railroads in jig time.



(With Apologies to K. C. B.)

I got disgusted with my auto
* * *
A few days ago and
* * *
Made up my mind that I would
* * *
Sell it immediately—at any price.
* * *
It is a speedster—and
* * *
Worth at least $500 or more.
* * *
I met a chap that wanted to buy
* * *
A car—so I said to him:
* * *
"Jim, I'll give you a bargain.
* * *
I'll sell you my bus for $300."
* * *
Jim turned the offer down.
* * *
Then I reduced my price to $250
* * *
And finally clear down to $150—
* * *
For I had sworn I would get
* * *
Rid of the car at any price.
* * *
But, by gosh, Jim refused to buy
* * *
Even at a price of $150,
* * *
Which was giving it away, almost.
* * *
I got thinking it over and
* * *
Remembered that some one said
* * *
That you couldn't sell Five-dollar
* * *
Gold pieces for 25 cents—
* * *
Because everyone is afraid to buy
* * *
Something for nothing.
* * *
I guess the best way to sell anything—
* * *
Property, services—in fact everything—
* * *
Is to demand a fair price and then
* * *
Stick to it. You'll get it.
* * *
People are afraid of a cheap price.

INSURING THE LIFE OF A PARTNER OR EXECUTIVE.

(Copyright by Ralph H. Butz.)

There are many instances where firms and corporations find it very desirable to insure the lives of one or more of the partners or executive officers. This is especially true when an executive is of extraordinary value because of his knowledge or special ability, and without the services of whom the firm might be seriously handicapped and would not enjoy as great a measure of prosperity.

The insurance of partners and executives is a sound business policy and is in the form of business insurance. This kind of insurance is steadily gaining in favor, as business men are beginning to realize how favorable it is to their interests. It is safe to state that the greater number of our large corporations are protecting their interests by having insurance in substantial amounts on the lives of their most important executives.

The experience of Elbert Hubbard will serve to illustrate how the leading business men and financiers view this question. During a prolonged period of business depression Mr. Hubbard thought it might be necessary for him to obtain a loan in order to continue the work at the Roycroft Shops. The bankers, whom he approached, were willing to grant a loan of $100,000, providing Mr. Hubbard would give as further security an insurance policy for $100,000 on his life.

Why life insurance to secure a loan for which there was other security in the form of real estate? Because the bankers knew that as long as Mr. Hubbard was there to direct the work of the Roycrofters, the continued success of the organization was practically assured, and that the loan was safe. But the bankers had no guarantee that Mr. Hubbard would be there forever, and in such an event there was a doubt in the minds of the bankers whether there was another man capable of directing this organization as successfully. Hubbard's genius had created the Roycroft establishment, and whether it could survive his loss was mere speculation.

Another case will further serve to illustrate this point. Jones and Wilson were co-partners. Jones had no special ability or knowledge about the business, in which he was engaged, and in most matters of importance he depended entirely upon Wilson, who was the real head of the business. Jones knew that he might not be able to continue the business successfully without Wilson to direct its affairs. After considering this question for some time they decided to have Wilson's life insured for $20,000 This insurance they considered as a good investment in addition to the protection it afforded, because the cash surrender value of the policy was an asset, which was available at any time when needed, and if the policy were kept in force until maturity the partnership would receive the face value. However, after the policy had been in force for four years Wilson died. Jones received the amount of the insurance and with it was able to continue the business successfully, while without it he would probably have failed.

It is a significant fact that, when the insurance is made payable to the partners individually, the creditors of the firm have no claim upon the proceeds, nor can the insured dispose of them in any other manner than is stated in the policy, either by will or otherwise.

In order to obtain insurance on the life of a person there must be an insurable interest. A person cannot have the life of another insured in whom he has no interest. A creditor has an interest in the life of his debtor and therefore may have his life insured. Insurable interest also covers the lives of partners and of men who are associated in business. A corporation has an insurable interest in the lives of its executives and officers. In other words, if through the death of a person another will suffer pecuniary loss or disadvantage, then he has an insurable interest in that person. It is not necessary that this insurable interest continue during the life of the policy, but it must exist at the inception of the policy.

When a firm insures the life of a partner or executive officer, the question usually arises: "How shall this insurance be treated on the firm's books?"

In order to illustrate this we will assume that Jones & Wilson insure the life of Wilson for $20,000. The form of the insurance is a 20-year endowment policy, and the annual premium is $1,200. The actual cost of carrying this insurance is the difference between the premiums and the cash surrender value of the policy, for the cash surrender value is an asset, because it is collectible at any time, when the policy is surrendered by Jones & Wilson. For instance, at the end of five years Jones & Wilson will have paid in premiums $6,000. Assuming that the cash surrender value of the policy at that time is $4,500, then the actual cost of carrying this insurance during the five-year period is only $1,500, or $300 for each year. Of course, during each succeeding year the expense grows smaller, for the cash surrender value of the policy grows proportionately greater.

Since there is no cash surrender value of the policy at the end of the first year, the first annual premium may be considered as a total expense. When the premium is paid the amount is charged to an account known as Life Insurance Premiums. Then each month, in order to take up this unexpired insurance premium as soon as it does expire, an entry is made in the journal. This entry may be as follows:

Dr. Life Insurance	$100	
Cr. Life Insurance Premiums		$100

Thus, when the twelve monthly entries have been made, as shown above, this account will be closed.

When the premium for the second year is paid the same process is repeated, and the monthly entries are made in the same manner. But at the end of the second year we find that the policy has a cash surrender value of $700. This amount is an asset and is placed on the ledger as such. Therefore, during the last month of the second year a journal entry should be made in the order shown:

Dr. Life Iusurance Policy	$700	
Cr. Life Insurance		$700

The life insurance policy account records the cash surrender value of the policy, and at the end of each year an entry should be made to add this annual increase in the value of the policy. By crediting the expense account, life insurance, as shown in the above entry, the expense of carrying the policy during the second year has been reduced to $500.

When annual dividends are declared, these may be used to reduce the amount of the premium, and to that extent reduce the expense of the insurance. An annual dividend of $120 would reduce the annual premium to $1,080, thereby reducing the monthly charge to insurance by $10.

When the person whose life is insured dies before the policy matures, then the face value of the policy will be collected. Cash is charged with the amount received; life insurance policy account is closed by crediting to it the amount shown on the debit side as an asset, and the balance of the proceeds is credited to the surplus account on the firm's books.

CASHING IN *on* "FOR SALE" SIGN

How a Plumbing and Heating Contractor Secured Much Repair Business from Owners Advertising Old Houses For Sale

By J. S. Older

SHORTLY after the United States took an active part in the war and just about the time that plumbing and steamfiting work started to slow up, a Kansas City master plumber and steamfitter received a call to go to a residence to repair some leaky faucets. While doing this work, the home owner volunteered the information that he was trying to sell the house, and that a prospective buyer had called attention to the leaky faucets, saying that very likely the entire plumbing would require overhauling. In this instance the prospective buyer judged the entire plumbing by two leaky faucets.

After the faucets had been repaired, the master plumber and steamfitter asked that he be allowed to look over the entire plumbing and steamfitting in the house. This he was allowed to do, with the result that he suggested various minor repairs, the total cost of which would come to $35. The house owner objected to making these repairs, giving as his excuse the fact that he was offering the house for sale and did not feel like investing additional money for the benefit of a new owner.

The master plumber and steamfitter was a good business man and realized that the only way in which he could get this work was by showing the home owner that it was to his advantage to make these repairs.

He took the home owner through the house and showed him various places where a small expenditure would greatly improve the appearance of the plumbing. He suggested that the old brass faucets be removed and new nickel-plated faucets take their place. He also suggested a white enamel drain board for the sink in the kitchen, with several other minor improvements of this nature. He argued that these improvements, while they would not cost very much, would greatly add to the value of the building, as well as make the entire home more attractive.

The home owner spent, all told, about $60.00 in the improving of the plumbing and steamfitting. Two months later the master plumber and steamfitter met the home owner on the street. Remembering the repairs he had made, he asked the home owner whether he had sold his building.

"Yes, I sold it all right," the former home owner replied. "I thought over what you suggested and after putting in the $60 worth of repairs, I spent an additional $38 in painting. Then I sold the house at $500 more than I had expected to get."

Originally the master plumber and steamfitter thought nothing out of the ordinary of the incident. But when his business began to drop off, and he was hard pushed to keep at least a few of his employees busy, he remembered the incident and began to wonder whether there were not many other homes for sale in which the plumbing required repairing.

Because he was not very busy, he called on half a dozen homes where the "For Sale" sign was prominently displayed. The result was in almost every home there was at least something he could do, if nothing more than simply fix leaky faucets. On the whole he secured considerable business in this way.

But walking along the street and looking for "For Sale" signs was hard work. At first he could not think of any other way in which he could get this business. Then one evening while reading the paper, he looked up the "For Sale" ads. Here he found many homes advertised, but it was almost impossible to reach the owners by making personal calls.

Then he thought of the fact that in one of his trade journals he had read of how one master plumber and steamfitter had greatly increased his business by using circular letters. If others could profitably use circular letters, so could he.

It was hard work to write a circular letter that was sure to get attention, but, after several days of hard work, he finally had a letter that suited him. Here is the letter:

Dear Sir:

You want to sell your home. You want to get all the money you can—and I think I know of a method that will increase the value of your property.

My business is plumbing and steamfitting.

I have always found that when a man buys a home, one of the first things he examines is the plumbing. If a faucet leaks, he deducts a hundred dollars from the value of the house. If the bathtub looks old, he deducts another hundred dollars. If he finds the plumbing all out of order, he does not want the place, although he may promise to see you again.

But the fact is, he buys another home, where the plumbing is not in need of repairing.

I know of one instance where $100 spent in improvement resulted in the sale of the house at $500 more than the owner expected to get.

Your plumbing may be in the very best of condition, but perhaps a new lavatory or kitchen sink, or even a few new faucets, will greatly increase the attractiveness of the entire house.

I am not asking that you have me go ahead and make plumbing improvements. I am simply asking that you allow me to look over the plumbing in your house. If I can make suggestions that will increase the value of your home, or that will enable you to get a better price, I will be glad to make such suggestions, and you can then decide whether or not you want me to go ahead and carry out whatever suggestions I make.

Allowing me to look over the plumbing in your house will not cost you a penny—and it will not place you under any obligations.

But there is a possibility that it may result in mutual benefit.

Do not stop to write me. Simply phone me. Tell

me I have your permission to look over the plumbing in your house. That is all I ask. My phone number is.....

Very sincerely yours,

.....

This letter was mailed out on Sunday to every person who advertised a home for sale. It brought results. Unusually good results—at least this master plumber and steamfitter is not worrying about the fact that there is little building going on, or that there are not many heating plants being installed.

September 18 and 19, 1918.—The fall meeting of the National Association of Brass Manufacturers, in Cleveland, Ohio.

October 14 and 15, 1918.—The annual meeting of the American Society of Sanitary Engineering, at Chicago, with headquarters at the Congress Hotel.

October 14 to 17, 1918.—The annual convention of the American Public Health Association, at Chicago.

October 16, 1918.—The fall meeting of the Central Supply Association, in Chicago.

Heating and Piping Contractors National Association, Inc.

Announcement has just been made that pursuant to proceedings taken under the laws of the state of New York, the corporate name of the National Association of Master Steam and Hot Water Fitters is now the "Heating and Piping Contractors National Association, Inc." The association has its headquarters at 50 Union Square, New York City, in charge of Secretary Henry B. Gombers.

Patrick Nacey.

Patrick Nacey, president and founder of the well-known plumbing business of the P. Nacey Co., of Chicago, died at St. Bernard's Hospital in this city on Wednesday evening, August 21st, in his 76th year, after several years' illness. Mr. Nacey came to Chicago in 1863 from Kingston, Canada, and his business grew to be one of the city's best known plumbing concerns. He was a highly esteemed member of the Chicago Master Plumbers' Association. His wife, two daughters and a son survive him. Harry M. Nacey, the son, is vice-president of the plumbing company founded by his father.

F. E. Kara.

F. E. Kara, for many years engaged in the plumbing business at San Francisco, Cal., died last week at his home in that city. Mr. Kara was one of the city's old-time master plumbers and he took an active part in the building up of San Francisco. He was one of the leading members of the San Francisco Master Plumbers' Association, and the loss of his friendship is felt keenly by many members of the trade.

R. A. Wordemann.

Corporal Ray A. Wordemann, formerly connected with the New York office of the Thomas Maddock's Sons Co., of Trenton, N. J., died from wounds received in action on Thursday, August 1st, "somewhere in France." At the very beginning of our war with Germany Mr. Wordemann enlisted in the Signal Corps. In announcing his death "The Anchor" says: "This first casualty among the Maddock boys 'over there' brings home to us the full meaning of this terrible conflict. We feel, however, the sacrifice of Ray Wordemann by giving his all, even life itself, has not been in vain, because it is sacrifices such as these that will assure Freedom and Democracy for the World for all time."

PATRIOTISM AND UNNECESSARY TRAVELING.

W. G. McAdoo, General Director of Railroads, has just issued the following self-explanatory statement to the public:

"Complaints have reached me from time to time of overcrowded trains and unsatisfactory conditions prevailing in some sections of the country in passenger train service. I feel certain that there are grounds for some of these complaints, but I am sure the public will be interested to know that the reasons are twofold:

"First, the great number of troops now being handled over the various railroads between the homes and the cantonments, between the different cantonments and then to the seaboard, is making extraordinary demands upon the passenger car and sleeping car equipment of the country. This has caused a scarcity of day coaches and sleeping cars which it is impossible to remedy immediately.

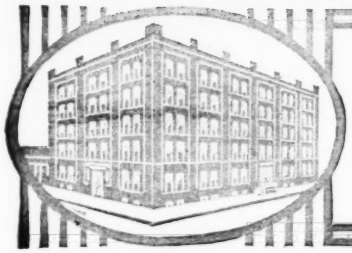
"Secondly, the increased demands upon track and terminal facilities for the transportation of the tremendous amounts of coal, food supplies, raw materials, and other things required for military and naval operations, as well as for the support of the civil population of the country, force the largest possible curtailment of passenger train service. The movements of troops and war materials are, of course, of paramount importance and must be given at all times the right of way.

"It was hoped that the increase in passenger rates recently made would have the wholesome effect of reducing unnecessary passenger traffic throughout the country. The smaller the number of passengers who travel, the greater the number of locomotives and cars and the larger the amount of track and terminal facilities that will be freed for essential troop and war material movements. Engineers, firemen and other skilled laborers will also be released for service on troop and necessary freight trains.

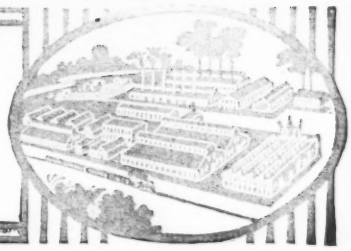
"Among the many patriotic duties of the American public at this time is the duty to refrain from traveling unnecessarily. Every man, woman and child who can avoid using passenger trains at this time should do so. I earnestly hope that they will do so. Not only will they liberate essential transportation facilities which are necessary for war purposes, but they will save money which they can invest in Liberty Bonds and thereby help themselves as well as their country; and the fewer who travel, the more ample the passenger train service will be.

"I may add that consistently with the paramount demands of the war, every possible effort is being made by the Railroad Administration to supply the largest possible amount of comfortable and prompt passenger train service."

Spokane, Wash.—The M. Isbister Heating & Plumbing Co. has been awarded the contract for the plumbing at the new swimming pool at the North Central High School. The contract amounts to $7,595.



Among the Wholesalers and Manufacturers



CONSERVATION OF METAL IN THE N. A. B. M.

Wm. M. Webster, of Chicago, commissioner of the National Association of Brass Manufacturers, has just announced that the "National Association of Brass Manufacturers at its meeting in June ordered and decreed that thereafter the members would not supply or furnish the little union nut or tail piece that screws into the nose of the bath cock and is commonly referred to as the hose connection, on which the hose for sprinkler is slipped over or attached. Many do not seem to understand that this order is in effect, and if these parts are furnished, which, experience has shown the manufacturers, are ordinarily quite useless, it will be at an extra charge. When the jobber receives a bath cock from the manufacturer, or the plumber from the jobber, or the public from the plumber, and they do not find them, they are not being deprived of anything that is rightfully theirs. It is simply the new order of things, that is all. This is a time of conservation, when all useless articles should be done away with, and metal conserved, and it is in keeping with the wishes of our Government."

THE AUGUST TOURNAMENT OF THE CENTRAL TRADE GOLF ASSOCIATION.

The Central Trade Golf Association will hold its next tournament on the links of the Thornburg Country Club, Thornburg, Pa., Thursday, August 29th. The day's events will be a qualifying round, a match play and a consolation round. No player will be allowed to win more than one prize.

JOSAM MFG. CO. MOVES TO CLEVELAND, O.

The Josam Manufacturing Co., of St. Louis, Mo., is just moving its factory and main office from that city to Cleveland, O., where the company has purchased a building for its own use exclusively, located at 3063-3067 East Sixty-first Street and having a floor space of 20,000 sq. ft. The new plant has good railroad shipping facilities, and its location in Cleveland is said to be the best possible for the company, being in the center of its trade territory.

WAR INDUSTRIES BOARD CONSIDERS THE STANDARDIZATION OF PLUMBING GOODS.

Frank S. Hanley, of New York City, secretary of the National Committee of the Confederated Supply Associations, has just issued the following information concerning the standardization of plumbing goods:

In conformity with prior notification, representatives of the plumbing, manufacturing and jobbing trade met T. F. Bailey, of the Hardware and Hand Tool Division of the War Industries Board, and members of the Conservation Division thereof, at Washington, August 9, 1918, for the purpose of discussing the standardization of various plumbing lines through economy in the number of styles, types, etc., thus conserving material and aiding the Government in the prosecution of the war. Furthermore to form War Service Committees representing each line, where nonexistent, in order to bring about a point of contact between the Government and said lines.

The various branches of our industry were represented as follows, notification having been sent out by the respective secretaries:

Brass Goods: A. S. Hills, Haydenville Co., Haydenville, Mass.; H. N. Gillette, Standard Sanitary Mfg. Co., Pittsburgh, Pa.

Central Supply Association: George H. Bailey, Bailey-Farrell Mfg. Co., Pittsburgh, Pa.

Earthenware: E. S. Aitken, Trenton Potteries Co., Trenton, N. J.; George G. Dyer, Sanitary Potters' Ass'n, Trenton, N. J.; Philip J. Faherty, Lambertville Pottery Co., Lambertville, N. J.; John Hanson, Kokomo Sanitary Mfg. Co., Kokomo, Ind.; A. M. Maddock, Thos. Maddock's Sons Co., Trenton, N. J.

Eastern Supply Association: John McClure Chase, W. A. Case & Son Mfg. Co., Buffalo, N. Y.; James A. Messer, John Mitchell, Jr., Co., Washington, D. C.

Enameled Ware: F. W. Broatch, U. S. Sanitary Mfg. Co., Pittsburgh, Pa.; George Herth and J. Charles Parry, Standard Sanitary Mfg. Co., Pittsburgh, Pa.

Range Boilers: Frank Sutcliffe, John Wood Mfg. Co., Conshohocken, Pa.

Soil Pipe and Fittings: W. A. Brecht, Krupp Foundry Co., Lansdale, Pa.; Wm. M. Byrd, Jr., Hammond-Byrd Iron Co., Birmingham, Ala.; DeC. Cleveland, Central Foundry Co., New York, N. Y.; F. H. Johnson, Casey-Hedges Co., Chattanooga, Tenn.

Tubular Brass Goods: W. A. Brecht, J. B. Wise, Inc., Watertown, N. Y.

Woodwork: B. O. Tilden, American Sanitary Works Trenton, N. J.

T. F. Bailey, on behalf of the War Industries Board, stated the purpose of the meeting, which we have outlined above.

The discussion in respect to the various lines was entered into by all representatives present.

The essential nature of the jobber's business was emphasized, and the part he is playing in the prompt and efficient distribution of material was commended.

Some of the manufacturing lines were in a position to present very complete data in regard to tonnage, etc., etc., to the Government officials, and after a general conference, representatives thereof went into consultation with the Conservation Division of the War Industries Board to devise ways and means to bring about the most effective co-operation between their lines and the Government. Prompt reports will be given to all affiliated members relative to the final outcome of the conferences.

It was found that War Service Committees have been formed in the following lines and associations, the names of members thereof furnished to the War Industries Board, and conferences will be held where necessary

with the members within a short time: Brass goods, cast iron soil pipe and fittings, enameled ware and sanitary earthenware, Central Supply Association, Eastern Supply Association and National Committee of the Confederated Supply Associations.

The representatives of the War Industries Board urged the formation of War Service Committees in plumbing lines where this has not already been done and requested the co-operation of this committee to this end .

Before the conference closed Secretary Hanley offered the services of the National Committee to the War Industries Board. The offer was accepted by the officials, and we were advised that they will continue to call on us for information in regard to the plumbing supply industry.

PITTSBURG WATER HEATER CO.'S CINCINNATI OFFICE UNDER NEW MANAGEMENT.

The accompanying illustration shows an interior view of the Pittsburg Water Heater Co.'s office at 522 Main Street, Cincinnati, O. Joseph G. Perkins, who recently

The Cincinnati Office of the Pittsburg Water Heater Co., of Pittsburgh, Pa.

succeeded Mr. Hengstenberg, is seen at the right in the picture. The central location of this office and its warehouse facilities have won the appreciation of the company's customers in that part of the country.

WOLVERINE BRASS WORKS EIGHTH ANNUAL OUTING.

The Wolverine Brass Works, of Grand Rapids, Mich., held its eighth annual outing at Ramona Park, Reeds Lake, Mich., on Saturday, August 10th. The large party, between 800 and 900 persons, consisting of the concern's employes and their families, made the trip to and from the picnic grounds on trolley cars, the company furnishing tickets not only for the transportation but also for the entree to all the concessions in the amusement park.

The leading features of the outing were an indoor ball game in the morning, the picnic dinner at noon and a base ball game in the afternoon. The indoor base ball game, between Joe Ryan's team and Lawrence Popma's, resulted in victory for the former, with a score of 10 to 9. In the base ball game in the afternoon the Wolverines defeated the Hamilton Reds to the tune of 12 to 10.

Sixteen races for boys, girls, ladies and the men were also on the day's program, the winners in each case receiving valuable prizes, a first and second prize being awarded in each race or contest.

The chairmen of the various committees, whose careful planning and efforts made the event a most pleasant success, were: R. G. Cornelius, John D. Hanson, Geo. F. Stevens, Glenn Barnes, Charles Nason and E. E. Hewitt.

RECOMMENDATIONS CONCERNING THE GENERATION OF POWER, LIGHT AND HEAT IN FACTORIES.

The United States Fuel Administration has just issued a poster for distribution among owners of factories and power plants, containing recommendations concerning the generation and use of power, light and heat. These recommendations are of vital interest to plant owners, because their supply of coal will depend upon compliance with the recommendations. These follow herewith:

That provisions be made for weighing and recording of the fuel used each shift or day.—Keep daily record of coal consumption, recording such weights in the boiler room. (See United States Fuel Administration Bulletin on "Boiler Room Accounting Systems.") A low rate of combustion per square foot of grate surface means waste. The coal burned per hour, divided by the grate surface in active use will give pounds of coal per square foot of grate surface per hour. For hand-fired furnaces with soft coal, this figure should not be less than 15 to 20, and for steam sizes of anthracite, 10 to 15. Reduce the number of boilers or grate surface to obtain the proper rate of combustion.

That feed water be heated, measured and regulated.

That provision be made for correct air supply and a convenient means for the measurement and control of the draft.

That provision be made to keep boiler surfaces clean inside and out.

That the grates be in good repair, that settings, breeching and access doors be free from air leakage, and that surfaces wasting heat be covered with insulation of ample thickness.

That the surfaces of steam piping, drums and feed water heaters, which waste heat by radiation, be properly covered with insulating material.

That exhaust steam be utilized wherever possible instead of direct steam from the boilers. The plant should be so designed and operated, so far as possible, that no more exhaust steam will be produced than can be used.

That a committee of employes be detailed on fuel conservation in the boiler and engine rooms and for the work of fuel, power and light conservation outside of the power plant.

The wide variation in conditions surrounding the use of power, light and heat is against any arbitrary rulings governing shop operations. The following points, however, should in a general way be of assistance:

Eliminate operation of motors when machines are idle, by means of convenient switches.

Group machines, so that driving motors or engines operate at their highest efficiency.

See that all bearings are regularly oiled and inspected to correct alignment and insure operation with least friction.

Eliminate belt slippage, so far as possible.

Stagger manufacturing operations so that peak loads will be flattened as much as possible.

In alternating current installations, provide means for improving the power-factor conditions.

Reduce elevator service to a minimum.

Reduce use of hot water to a miniuum.

Stop all leakage in water spigots, pipes, etc.

Reduce number of lights used wherever practicable. Reduce candle power of lights used wherever possible.

Eliminate use of carbon lamps and replace with mazda or other high efficiency lamps.

Eliminate arc lamps by using large lighting units of more efficient type.

Provide a thermometer in different parts of the shop and make arrangements to keep the temperature within reasonable limits.

Eliminate heating radiators or piping not in actual use.

Wherever possible provide storm doors and storm windows on all openings, used during winter months.

State administrative engineers will be glad to furnish plant owners with further information.

Personal Mention

M. C. Wilde, auditor and assistant secretary of the Standard Sanitary Mfg. Co., Pittsburgh, Pa., has been elected assistant treasurer of the company, and he will hereafter be assistant secretary and assistant treasurer. Mr. Wilde has been connected with the Standard Sanitary Mfg. Co. since its organization, and was before that connected with Dawes & Myler, in New Brighton, Pa., for several years. In 1907 he was made auditor and developed an efficient organization right from the beginning of his long tenure (January, 1907, to July, 1918). His promotion is thus well merited.

James De Haven, assistant auditor of the Standard Sanitary Mfg. Co., of Pittsburgh, Pa., has just been appointed auditor of the company. Mr. De Haven entered the service of the Standard Sanitary Mfg. Co. in the treasurer's department in 1901, at the age of 18. In 1907 he was appointed cashier, and in 1917 assistant auditor. On August 1st, this year, he was made auditor. To have reached this position at the age of 35, is sufficient evidence of Mr. De Haven's ability.

The accompanying picture shows the likeness of two of the handsomest men that ever met south of the Mason-Dixon line, according to the party who furnished us with the original photograph. The picture was taken on the top

C. H. Rogers and R. R. Rabe on the Top of Lookout Mountain.

of Lookout Mountain, near Chattanooga, Tenn. From left to right the gentlemen are: C. H. Rogers, purchasing agent for the Scioto Valley Supply Co., of Columbus, O., and R. R. Rabe, salesmanager for the Casey-Hedges Co., of Chattanooga, Tenn. It is evident that they both aspire to the high things in life. The sky is their limit, and the picture shows they have almost reached the limit, which, according to Mr. Rabe, is about as far as any one in the plumbing trade can go."

Wm. Devine, Jr., western representative for the Thomas Maddock's Sons Co., will leave Chicago, September 1st, for Trenton, N. J., where he will spend several months at the company's main offices.

J. B. Bernhard, manager of the Chicago branch of the Kanawha Mfg. Co., of Charleston, W. Va., has recently returned from a two weeks' trip in the South.

W. M. Scudder, Chicago branch manager of the American Radiator Co., Chicago, has recently returned from a vacation in the Canadian woods. He was accompanied by D. E. Kennedy, district sales manager of the concern.

L. Bruce Fulton, manager of the Chicago branch of the Standard Sanitary Mfg. Co., Pittsburgh, Pa., has left on a brief business trip in the west. He will return to the city on or about August 30th.

Harry Verbeek, of the Harry Verbeek Co., Chicago, is spending a week in Central Michigan, where he is combining business and recreation.

W. E. Gnann, of the Colonial Supply Co., of Pittsburgh, Pa., was in New York City last week on business. Incidentally he also made his first trip to Coney Island.

B. A. Hungerford, manager of the Chicago office of the Pittsburg Water Heater Co., of Pittsburgh, Pa., has returned to his desk, following his convalescence from an operation, which was performed at the St. Elizabeth Hospital several weeks ago.

M. K. Blackwell, of the sales force of the Wolverine Co., Inc., of New York City, has just joined Uncle Sam's force at Camp Dix. Mr. Blackwell, who has been with the Wolverine Co. for the past nine years, has lately been covering Connecticut and New York territory.

TRADE LITERATURE.

An exceptionally neat pamphlet, containing complete technical description of the "Pittsburg" line of gas-fired water heaters, has just been issued by the Pittsburg Water Heater Co., of Pittsburgh, Pa. The pamphlet also contains much information on the general subject of gas water heating.

"The Modern Way" is the title of a new catalog just issued by the Vaile-Kimes Co., of Dayton, O., illustrating and describing this company's pumps and systems for rain water service, for general water supply from shallow wells and from deep wells, as well as much general information about water supply systems. The catalog consists of 32 pages, 8 by 10¾ inches in size, and it is carefully printed on highly glazed paper.

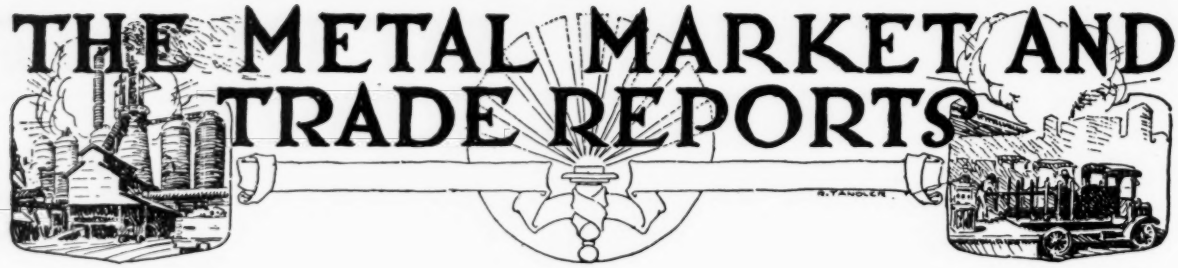
The Detroit Valve & Fittings and Detroit Brass Works, of Detroit, Mich., has just issued its "Catalog H," illustrating and describing its malleable iron fittings, standard and special brass goods for steam water and gas, etc. The catalog consists of 248 pages, 4¼ by 6¾ inches in size and it is bound in blue cloth. Both paper and cuts used in its production are high grade.

Officer (while examining applicant for Fort Snelling): "Got any scars on you?"

"No, but I got some cigarettes over there in my coat."—"Awgwan."

By this time there is not much about strategic retreats that the Crown Prince has not thoroughly learned.—"Washington Evening Star."

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

The recent hot weather caused a setback in the steel producing industry, but by this time the men are working as usual. There are complaints as to the efficiency of some of the labor employed in the finishing shops. Labor has been scarce, and in endeavoring to secure enough help to meet the present demands producers have outbid each other until they find that they have eaten up so much of their profits as to necessitate a call on their part for increased prices for their products. The increased wages in steel mills would not be so great an obstacle to the industry, if anything like proportionate value were returned by the workmen. The scarcity of steel is more pronounced as the time goes on, and the labor difficulties are as much the cause of it as anything else. The demands of the Government are extremely heavy and the necessity for preserving an even balance between the various departments makes the problem of distribution even more difficult.

Consumers of pig iron are concerned about the prospects of supply, and some large concerns are in the market for next year. There is no free iron for the balance of this year and, in fact, some of the furnaces are oversold and cannot deliver all they have contracted to produce. For that reason it is difficult to induce them to enter into contracts for the first half of 1919. It is estimated that purchases in the Pittsburgh district have amounted to 100,000 tons for delivery next year, and as there is no certainty as to price the contracts provide that the price shall be the maximum established by the Government agreement at the date of shipment, and in the event that there should be no established price at the time, the price shall be on the basis of $33 per ton for No. 2 foundry or Valley furnace. Production during August will show considerable falling off in comparison with July owing to the recent hot spell. This not only hampered the efficiency of the labor, but the humidity interfered with the blast.

Copper.

Distribution of copper goes on in a routine way, and there is not much to be said as to the market. The supply appears to be barely sufficient, at present, to meet the more important needs of the consumers holding Government contracts, and there is no refined copper to meet the demands of the consumers for commercial purposes. This condition is not expected to continue for any length of time, however, as production is exceptionally large. Outside requirements are not large, as the bulk of production goes to those holding Government contracts, which seem to be growing and might cause some uneasiness as to supply, if the statistical position of the market were not so well assured.

Tin.

An arrangement with the Dutch is expected to be made which will provide for the shipment of Banka tin in a way that will most likely allow it to come forward more regularly. Banka and Chinese tin were offered at the end of the week freely at 90 cents, but there were no buyers, and futures were quoted nominally.

Lead.

The situation in lead is acute, as the supply that was in the dealers' hands is about exhausted. It is useless to turn to the usual channels of supply, because all are blocked with lead under contract for consumers, and there is no free metal in sight. The lead committee is following the course pursued by all similar committees of the metal trades and is apportioning future supply to those who can satisfy it that the lead is required, at least indirectly, for Government war purposes. So that the entire market, while entirely in the producers' hands, is restricted to war purposes. The contract price for fall delivery remains at 8.05 cents in New York, and at 7.75 cents in East St. Louis.

Spelter.

The market for Prime Western spelter has fallen into the control of the sellers, and, as there is no price restrictions and as the buyers are anxious for supply, they are bidding the price up against themselves on comparatively small parcels. At the close of the week prompt and nearby delivery in New York were quoted at 9 to 9⅛ cents and all positions for East St. Louis shipment ranged between 8.65 and 8.80 cents.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum (in 100-pound lots)	49 cents per lb.
Antimony, Chinese and Japanese	17 cents per lb.
Solder No. 1	65 cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying.	Selling.
Copper, heavy	24 cents	25 cents
Copper, light	20 to 21 cents	23 cents
Brass, heavy	14 to 14½ cents	15¾ cents
Brass, light	12 to 12½ cents	13½ cents
Brass turnings	14 to 14¾ cents	15½ cents
Brass clippings	15½ to 16½ cents	17¼ cents
Tea lead	5¾ to 6¼ cents	7 cents
Aluminum clippings	30 to 32 cents	33 cents
Solder joints	14½ to 15 cents	16 cents
Lead, heavy	7 to 7¼ cents	7¾ cents
Cocks and faucets	18½ to 19 cents	20 cents
Mixed babbitt	8 to 8¾ cents	9½ cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

	Buying.	Selling.
Heavy yellow brass	15 to 15½ cents	16½ cents
Brass, light	11 to 11½ cents	13 cents
Brass, medium	12¼ to 12¾ cents	13¾ cents
Brass clippings	15½ to 16 cents	17 cents
Red brass	21½ to 22 cents	23 cents
Cocks and faucets	17 to 18 cents	19 cents
Copper, heavy	23 to 23½ cents	24½ cents

Lead, heavy	6¾ to 7 cents	7½ cents
Tea lead	5¾ to 6 cents	6½ cents
Solder joints	15¼ to 15¾ cents	16½ cents
Old iron pipe, per ton	$24.00	$25.00

The Pipe Market.

No changes have been announced in the pipe market during the last weeks.

Quotations on less than car lots of full weight steel pipe remain as follows:

	Butt Weld.		Lap Weld.	
	Blk.	Galv.	Blk.	Galv.
⅛ to ⅜ inch	38	10	....	....
½ inch	42	26	....	....
¾ to 3 inch	45	30	....	....
2 inch	....	....	38	24
2½ to 6 inch	....	....	41	27
7 to 12 inch	....	....	38	23
12 to 14 inch	....	....	28½	....
15 inch	....	....	26	....

The quotations apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong steel pipe in less than car lots, quotations are as follows:

	Extra Strong				Double Extra Strong			
	Plain Ends		Plain Ends		Plain Ends		Pl'n Ends	
	Butt Weld		Lap Weld		Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.
⅛, ¼ and ⅜ inch	29	9	....	....	....	....	....	....
½ inch	34	14	....	....	25	5	....	....
¾ to 1½ inch	38	18	....	....	28	8	....	....
2 to 2½ inch	39	19	....	....	30	10	....	....
3 inch	39	19	....	....	....	....	....	....
2 inch	....	....	31	12	....	....	23	4
2½ to 4 inch	....	....	34	15	....	....	25	6
4½ to 6 inch	....	....	33	14	....	....	24	5
7 to 8 inch	....	....	29	10	....	....	19	List
9 to 12 inch	....	....	24	5	....	....	....	....

With threads only, the basing discount is 1 and 1½ points lower. With threads and coupling the basing discount is 3 points lower. The quotations apply to all quantities less than car lots.

Quotations on full weight genuine iron pipe, in less than car lots, are as follows:

	Butt Weld.		Lap Weld.	
	Blk.	Galv.	Blk.	Galv.
⅛ and ¼ inch	16	+13	....	....
⅜ inch	17	+12	....	....
½ inch	21	1	....	....
¾ and 1 inch	26	8	....	....
1¼ inch	26	8	11	+6
1½ inch	26	8	18	2
2 inch	....	....	19	3
2½ to 6 inch	....	....	21	6
7 to 12 inch	....	....	18	3

These quotations are f. o. b. Pittsburgh, and apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong genuine wrought iron pipe, with plain ends and in less than car lots, the quotations are as follows:

	Extra Strong				Double Extra Strong			
	Butt Weld		Lap Weld		Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.
⅛ to ⅜ inch	11	+9	....	....	....	....	....	....
½ inch	16	+4	....	....	3	+17	....	....
¾ and 1 inch	22	2	....	....	8	+12	....	....
1¼ inch	22	2	8	+12	8	+12	....	....
1½ inch	22	2	14	+6	8	+12	3	+16
2 inch	....	....	16	+4	....	....	3	+16
2½ to 4 inch	....	....	18	+2	....	....	5	+14
4½ to 6 inch	....	....	17	+3	....	....	....	....
7 to 8 inch	....	....	9	+11	....	....	....	....
9 to 12 inch	....	....	4	+16	....	....	....	....

These retail prices are f. o. b. Pittsburgh, and apply to all quantities except in car lots. With threads only, the basing discount is 1½ points lower. With threads and couplings, the basing discount is 3 points lower.

To ascertain the price in any city, deduct the proper freight rate from Pittsburgh to that city. To illustrate: ¾ to 3-inch steel pipe, black, is 45 per cent off, Pittsburgh. The freight to Chicago is 39 cents, or it would be 45 per cent minus .039, or .411 per cent Chicago for 10 cents a hundred freight you should deduct one point.

RUSSIA'S PLATINUM NEEDED BY THE ALLIES.

The question of securing Russia's supply of platinum for the Allies is pressingly urgent, says J. P. Hutchins, in "Asia Magazine." It should not hang in any sense on a matter of price—Germany should be outbid at all cost. It is not sufficient merely to provide an adequate supply for the Allies. Germany must be prevented from getting any. Even on a basis of money cost, it promises to be far more costly to commandeer and melt up the platinum treasures in jewelry in this country, should that be necessary. There is reason to believe that much of the so-called platinum jewelry now in existence will be found to be composed wholly or in part of other and cheaper metals.

It is possible that with effective Allied organization the present prices of $105 per ounce would control the Russian supply. There are always ways and means of securing this control, as also of seeing that fields are worked and the output increased. The present world output is probably decidedly inadquate. It needs speeding up and this can be done. Will the Allies act?

The most profitable dredging in the world can be done on the platinum placers in Russia. The value of the metal recovered is often equivalent for considerable periods of operation to $5 per cubic yard. When one remembers that the gravels of the California gold-dredging fields produced only about 10 to 15 cents per cubic yard on an average, and nevertheless paid well, the possible profits of platinum dredging become apparent.

Before the war, there were about 25 dredges at work in the Urals, operating two-thirds of the time of each working season of about 150 days, and averaging 500 cubic yards per dredge per day, thus working a total of about 1,250,000 cubic yards of material per year, and recovering annually 75,000 to 100,000 ounces of platinum. There is only one first-class dredge in operation in the Urals. They are mostly of antiquated design and of poor construction. First-class dredges working in material of similar characteristic dig several times as much gravel per day in other countries with similar climate. Working costs in the Ural region are twice those in Montana, which has a similar climate, but where the auriferous gravel is much harder to dredge.

BAVARIA'S IRON INDUSTRY.

Iron ore has been mined in Bavaria since the middle ages, when a good deal of ore was exported, but in later times the industry lost its relative importance. Recently, however, Bavaria has again begun to produce on a considerable scale, and now the kingdom ranks fourth among the iron-ore producing states of the Empire, its production having risen from 180,342 tons in 1904 to 485,254 tons in 1913. The ore in sight is estimated at from 150,000,000 to 200,000,000 tons.

The principal mines are those at Amberg, owned by the state, and those near Sulzbach and Auerbach, which belong to the Maximilian works at Rosenberg. The Deutsch-Luxemburg works started mining operations in 1916 at two mines near Hiltersdorf, which had lain idle since the beginning of the war, while several large Rhenish iron works have also acquired concessions.

The No. 1 Hoffman Siphon Air Valve

For Gravity Systems

makes the radiator to which it is attached produce maximum heat with minimum fuel consumption.

It vents all air quickly but closes instantly against steam and water. Keeps every square inch of heating surface steam hot when there is the slightest boiler pressure.

Automatic. Non-adjustable.

The No. 2 Hoffman Siphon Air and Vacuum Valve

For Gravity Vacuum Systems

is a decided specialist in its field. Freely vents all air from radiator and prevents its return through valve into radiator when the pressure goes off. Since it has taken fuel to get up pressure necessary to push the air out of the radiator, it is a common sense proposition to keep it out. Heat is retained after pressure goes off, thus affecting a saving of coal.

The only non-adjustable air and vacuum valve.

HOFFMAN VALVES

The Man f
—The Sa

The government has paved the way for you to form special ruling, you have been given the right to u n the maintenance and *essential* (coal-saving) repa ex coal shortage.

There will be *just so much coal and no more.* Distr efficiency of the heating plants to be supplied. Fuel be wasted and expects your co-operation.

Do you know how much coal can be saved by u Ho advertisement in last week's issue? If you did, tu it n can conscientiously afford not to use these patrio lve

Hoffman Valves are designed for every venting ice ciency, economical heat and the saving of labor.

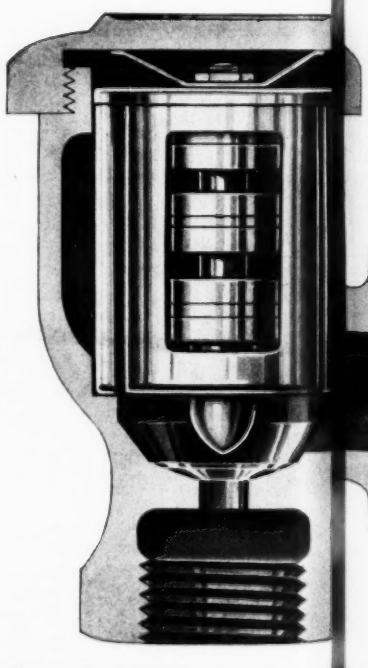
Prepare your patrons now for winter by mak hei everlasting gratitude, keep your business active et a

Get Hoffman Va Fro

Hoffman Spe l

New York:
512 Fifth Avenue

130 N. Wel ee



f the Hour
Samfitter

HOFFMAN VALVES

to form an important part in fuel conservation. By a
o u necessary materials, supplies and equipment for
pa existing heating plants, to meet the exigency of the

Distribution will be governed, to a great extent, by the
Fuel Administrator is not going to allow any fuel to

v u Hoffman Venting Valves? Did you read our page
tu it now and read it again. Then decide whether you
rio alves.
ngice. Wherever they are in use it means added effi-
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ak heir heating systems efficient. You can win their
e et a good profit.

Va from Your Jobber

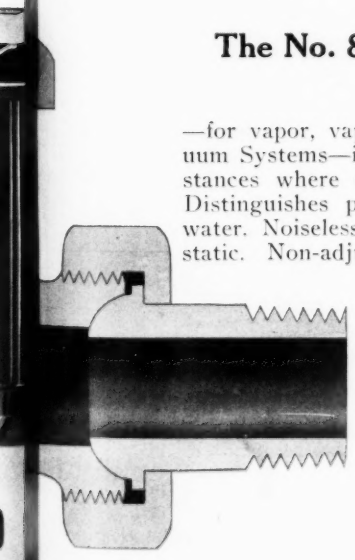
ealty Company

Los Angeles:
215 W. 7th Street

el eet, Chicago

The No. 8 Hoffman Return Line Valve

—for vapor, vapor-vacuum, Modulating and Vacuum Systems—is working successfully in many instances where ordinary steam traps have failed. Distinguishes positively between air, steam and water. Noiseless in operation. Automatic, Thermostatic. Non-adjustable.



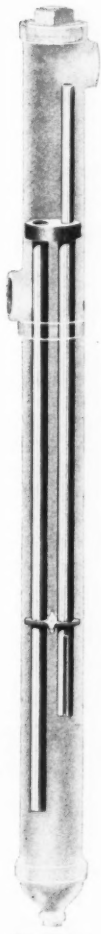
While the No. 8 Hoffman was designed as a low pressure steam trap, it has been found highly efficient when used as a **unit** drain trap for Cooking Kettles, Warming Pans, Coffee Urns, Steam Clothes Pressers, Hospital Sterilizers, etc. If you have not used it for this purpose, you are missing a good thing.

Hoffman Equalizing Loop

Makes Vapor Heating Absolutely Safe

BECAUSE:

First: Maintains an unvarying water line in the boiler, independent of boiler pressures, that is, no matter whether the boiler pressure is 8 oz. or 5 lbs., the water line in the boiler will maintain at a constant level.



Phantom View

Second: It maintains, when boiler pressure is more than 10 oz. a fixed pressure difference between the main steam line from the boiler and the main air return from the radiators, of 10 oz. In other words, the pressure in the steam main is always 10 oz. ahead of the pressure in the return main.

Exterior View

Third: It does these two things automatically without noise or commotion in any way, shape or manner, and without thought on the part of the user. It is always on guard and can always be depended upon to do the two things it is designed to do, i. e., maintain an unvarying water line between 8 oz. and any pressures above, and maintain a fixed pressure differential between the steam main and the return air line.

Can be used on old or new work

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

B. J. Farwell, of 410 Sherman Street, has secured the contract for the installation of the plumbing in a cold storage plant, to be erected at a cost of $350,000, at 4111-23 South Union Avenue.

Gallagher & Speck, of 215 West Congress Street, Chicago, will install the heating system in a $50,000 hospital, which is to be built at Paducah, Ky.

Nilson Bros., of 3222 North Halsted Street, have been awarded the contract to install a heating system in an eighteen-family apartment building, which is to be erected, at a cost of $45,000, at 630 York Place.

The William Sullivan Co., of 34 West Austin Avenue, has secured the contract to install the heating system in a $15,000 garage to be built on Robey Street, between Polk and Taylor Streets.

The Phillips-Getschow Co., of 130 West Kinzie Street, will install the heating system in a $30,000 addition to a factory at 310 North Ada Street.

William P. Arnold, of 2345 West Twelfth Street, has been awarded the contract to install modern plumbing in a residence and garage, which are to be built, at a cost of $20,000, at Stone Avenue and Elm Street, La Grange.

William Downs, of 4219 South State Street, has been awarded the contract for the installation of a heating system in the new Cooper Manatah hotel, which is to be erected, at a cost of $600,000, at 4647-59 Drexel Boulevard.

The Adelman Heating Co., 1305 South Crawford Avenue, has secured the contract for the installation of the heating system in a bank, store and apartment building, which is to be erected at a cost of $25,000 at 1556-58 South St. Louis Avenue.

The Roberts Plumbing Co., of 4544 North Western Avenue, has secured the contract for installing the plumbing in a $20,000 service building, to be constructed on West Fifty-fourth Street, for the Pennsylvania Railroad Co.

Carl J. Stein, of 853 South State Street, has been awarded the contract for the installation of the plumbing system in an $8,000 building, which is to be erected at 221 South Leavitt Street.

J. J. Burns, of 3857 Archer Avenue, will install the plumbing in a three-story apartment building at 5647 South Rockwell Street.

The Stanley Plumbing and Heating Co., of 6554 Cottage Grove Avenue, has been awarded the contract for installing the plumbing in a new two-story factory at 1140-42 West Forty-seventh Street.

The Aetna Heating Co., of 810 West Sixty-third Street, Chicago, will install the heating and plumbing systems in a $10,000 rectory which is to be built at Peterstown, Ill.

Charles B. Ball, chief of the Bureau of Sanitation, Chicago, has just returned from a motor trip covering a total of 617 miles in Central Wisconsin. There were four in the party and eight days were spent in touring the rich expanses of the State. Mr. Ball was favorably impressed with the splendid condition of the wheat and oat crop. He said that he saw no cessation of building operations in the farming communities, and that new buildings and additions to farm dwellings are going up at practically all points.

Other Cities in the State.

O'Brien Bros., of 807 South Adams Street, Peoria, have secured the contract to install modern plumbing in a $10,000 residence and garage, to be built at 626 North Glen Oak Avenue in that city.

The Bergner Plumbing & Heating Co., of Granite City, will install plumbing and heating systems in a labor temple, comprising stores, etc., which is to be erected at a cost of $44,000 in that city.

Kentucky

Louisville and Vicinity.

Developments have been coming thick and fast in connection with the big plans of the Government for construction of the large military cantonment for the artillery department at Stithton, Ky. The general contract for a part of this work has been let to John Griffith & Son Co., Chicago, who has opened offices at the Seelbach Hotel temporarily. Mr. Griffith in turn let the heating, plumbing end electrical contracts to Hanley & Co., of Chicago. The latter, when approached by the Louisville Master Plumbers' Association for a part of the contract, stated that he could easily carry the contract himself. Mr. Hanley has appointed M. J. Duffy, of Louisville, as general superintendent; and John H. Fleck, first assistant superintendent. He has announced that only union plumbers will be engaged on the work. Several master plumbers will probably obtain positions as foremen, or unit managers when the work actually starts. Lumber and other materials are now being shipped to the site at Stithton, and work is already getting underway.

Two separate camps are being built, one at West Point, and the other at Stithton, the West Point camp being a much smaller one. However, the camp will string out over a large portion of the ten miles separating West Point and Stithton, and will in reality be one big camp when completed. It is estimated that about $15,000,000 will be expended in all on the work at these points, and probably several general contracts let for the units of buildings.

The Alfred Struck Co., of Louisville, has been building the camp at West Point, where a lot of preliminary work is being done. This concern let a contract for the preliminary plumbing work, including 35,000 feet of eight-inch main, and many thousands of feet of two-inch and smaller mains, which are being run through the site in advance of construction of the buildings, so that water will be available for the work as it progresses. This big contract was placed with a firm organized for the purpose, by A. J. Anderson and George Schardein, both of Louisville, and is estimated to run to several hundred thousands of dollars in all, and net a nice sum in commissions.

The plumbing contract at West Point as well as the

heating on the Struck contract was placed with the heating and plumbing firm of Heller, Zehnder & Redmon, of Louisville, which does a lot of work for the Struck concern. This contract calls for the plumbing in the various units of buildings erected by the Struck company, and will run into handsome figures. Work is well under way on the Struck contracts.

The Louisville Examining Board of Plumbers has announced that it will start making examinations of journeyman plumbers with a view of granting licenses under the state law, on August 26.

The Louisville Master Plumbers' Association now has a service flag carrying six stars, representing six members of the association, who have either enlisted or been drafted into the service. T. C. Huglan enlisted in the navy some time ago, while B. J. Starke enlisted in the regular army. W. R. Seestadt also is in the service, having been drafted, and J. L. Schanzenbacher also has been called for service. The firm of Leonberger & Knuettel quit, when both members of the firm were drafted for service at the same time, these men being Nathaniel Leonberger, Jr., and E. L. Knuettel. Any number of journeymen plumbers, steam fitters, etc., have gone into service, Six master plumbers from one organization is a fairly good representation, and represents a big percentage of the younger men of draft age in the organization.

John D. Coldewey.

One of the recent additions to the ranks at Camp Taylor, Louisville, was John D. Coldewey, of Louisville, traveling representative of the Ahrens & Ott Division, of the Standard Sanitary Mfg. Co., who for the past four or five years has been traveling through the South, out of Atlanta, Ga., which office is under the supervision of George Crawford, of Nashville, Tenn., district manager. Mr. Coldewey started with the local office several years ago, and made such an excellent record that he was sent South, and was slated for one of the first vacancies in the branch offices. At the present time he is a private at Camp Taylor, where he is chumming with his old friend Killian L. Seng, formerly of the Kentucky Title Co., who was drafted at about the same date. Mr. Coldewey is well known to the trade in the South, and also in Louisville, where he was city salesman for some time. At the present time he has expectations of becoming a sergeant shortly, having been slated for promotion as a non commissioned officer.

Tennessee

Memphis.

The Memphis Master Plumbers' Association, of which W. W. Cronin is president and J. W. Evans secretary, is planning its usual summer picnic to be held late in August or early in September.

Wilhelm Plumbing Co., Monroe Avenue, have completed the installation of a water supply system and plumbing in the country home of G. P. Mangum at Tunica, Miss.

A. T. Pipin, of 361 High Street, Memphis, reports considerable repair work in progress in his section of the city.

BRINGING
ARMSTRONG TOOLS
TO YOU

THIS Pipe Cutter is not only the strongest and most rapid working, but it is the cheapest, by reason of its taking a larger range of pipe than any pipe cutter known.

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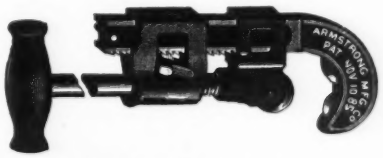
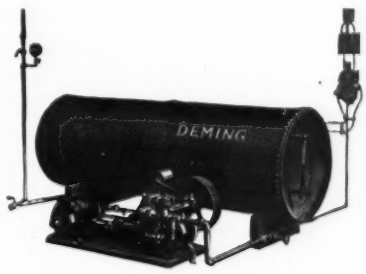


Model A Quick Acting
THE ARMSTRONG MFG. CO.
284 Knowlton Street Bridgeport, Conn.



DEMING

Complete Water Systems

Capacities of pumps from 125 gallons to 130,000 gallons per hour. Tanks up to 20,000 gallons. Electric systems are automatically controlled. Write for booklet "Deming Water Supply Systems," or if interested in pumps of all kinds, ask for 360-page general catalogue, No. 25-D, containing details of "more than a thousand styles and sizes."

The Deming Company, Salem, O.

GENERAL DISTRIBUTING HOUSES:
Henion & Hubbell, Chicago. Harris Pump & Supply Co., Pittsburgh.
Root, Neal & Co., Buffalo, N. Y. Ralph B. Carter Co., New York City.

UNITED LEAD TIN BRASS **LINED PIPE**

Longest-lived, most economical pipe made. Also "United" acid-proof pipe and fittings.

UNITED LINED TUBE & VALVE CO.
186 Franklin Street BOSTON, MASS.

THE SIGN OF GOOD FLASHINGS

GALVANIZED COPPER ALL LEAD

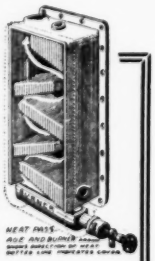
We are the only concern in the country making a complete line of Adjustable Roof Flashings in Galvanized Iron, Copper or All-Lead.

Simplex Flashings are the best that HONEST CONSTRUCTION, SUPERIOR MATERIALS and EXPERT WORKMANSHIP can produce.

Ask your jobber.

Simplex Mfg. Company 313 So. Clinton St., Chicago, Ill.

New Heaters in Old Buildings—



Sharp's Cleanout Water Heater is new and different. It appeals at once to any householder who has had trouble with clogged coil heaters. Wherever hard water is encountered, you can build a paying business with Sharp's Heater. Its construction eliminates all coils and small passages.

Write or wire for particulars at once.

General Manufacturing Company
Heater Dept. 67 19th Street, Wheeling, W. Va.

Ohio

Mahoning Valley Master and Journeyman Plumbers' Annual Outing.

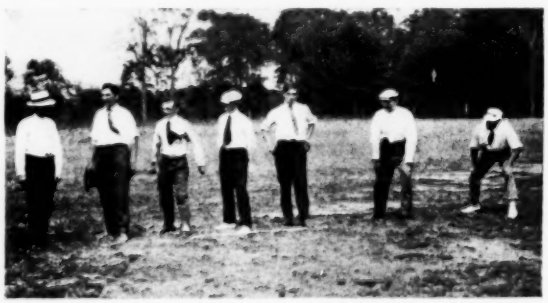
The Mahoning Valley Master Plumbers' Association and Local Union No. 87, Journeyman Plumbers, held their eleventh annual joint outing at Southern Park, Youngstown, O., on Saturday, August 10th.

About 500 persons—masters, journeymen, their families and sales representatives—attended the outing.

The guest of honor, and the speaker of the day, was Congressman John G. Cooper, of the Eighteenth Ohio District.

An appetizing chicken dinner was served under the auspices of the entertainment committee. Games, races and a spirited ball game between the master and journeyman plumbers furnished a wealth of interest and excitement for the picnickers. The journeymen carried away the baseball honors and were presented with a box of choice cigars which were "smoked up" by the members of the triumphant team.

Five valuable prizes were awarded to the winners in the 100-yard race for master plumbers. The winners and prizes were as follows: Dominic Marino, first prize (suit of clothes); C. F. Henry, second prize (square-end cutter); Wm. Stefanski, third prize (stock and dies); Thos. Ribbons, fourth prize (heater); T. R. Pippinger, fifth prize (one bath cock).



The Master Plumbers' Hundred Yard Race.—From Left to Right: W. D. Kaifer, Norman Little, Thomas Ribbons, Wm. Stefanski, Dominic Marino, T. R. Pippinger and C. F. Henry.

Five attractive prizes were also awarded to the winners in the journeymen's 100-yard race.

In the races for master and journeyman plumbers' wives, choice prizes for household use, were awarded to the winners.

The Mahoning Valley Master and Journeyman Plumbers' Eleventh Annual Outin

In the salesmen's race, David Keaggey, Dick Backus and John Crows were proclaimed winners. They were awarded war savings stamps.

Races and prizes for boys and girls of different ages was another feature of interest.

The ladies tug of war, with twelve on each side, furnished much amusement. Silver spoons were awarded to the members of the winning side.

The tug of war between the master and journeyman plumbers was won by the latter, the prize being a box of good stogies.

The sixteenth event was the concluding number of the program. This consisted of prizes for the best waltzing couples.

Some of the Supply Men at Mahoning Valley Plumbers' Outing.

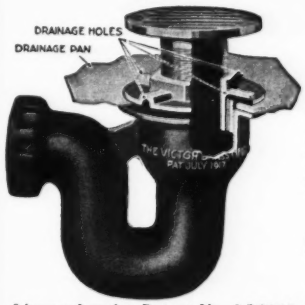
This picnic is said to have been one of the most successful in recent years. The spirit of good fellowship which prevails between the Youngstown masters and journeymen was clearly in evidence. Leading master plumbers in the Mahoning Valley declared that these joint outings tend to cement the bonds of mutual understanding, which has existed for some time between employer and employe in the plumbing business.

The members of the entertainment committee, to whom much credit is due for the success of the outing, were: T. G. Beede, C. F. Henry, Wm. Rowland, C. W. Wilson, F. W. Pfund, R. Seddon, Harry Davis and Roy Edwards.

Cincinnati.

The Fischer-Devore Co., general contractor on an office building for the P. W. Drackett Sons Co., in Winton Place, Cincinnati, has sublet various parts of the work, the plumbing going to Thomas Canary and the heating to the Nichols Company. The building will cost about $12,000.

VICTOR



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Feature No. 4

Safe pan of lead, copper or zinc is held air and water tight to the bowl of trap by a drainage bushing screwed down tight on pan.

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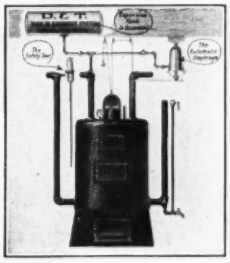
Saves 25% on Coal Bills



It is the most economical and efficient method of Hot Water Heating known. It will save your client money on the purchase of equipment, the installation and up-keep.

Over 35,000 D. & T. systems now in use.

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The demand for our Ingot Metal has made H.I.M. grow.

The largest Brass Goods Manufacturers in the middle west are using exclusively our **Red and Yellow Ingot Metal.**

Brass Founders using **H. I. M.** Ingot Metal are paying no attention to the high price of Copper and Spelter.

If you neglected to buy H. I. M. write for particulars.

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Outing, Held in Southern Park, Youngstown, O., on Saturday, August 10, 1918.

Gauge Glass Immediate Delivery

High-grade American made Gauge Glass, tested to 2,100 pounds, oil and water pressure.

Developed by American ingenuity, made in our own country and absolutely guaranteed.

And Remember we can deliver them immediately in any quantities, any size, any length.

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Wyckoff's Water-Proof Steam Pipe Casing

is composed of selected and carefully inspected staves of Cypress. Two casings of Cypress wood, the inner shell, 2 inches thick and an outer shell, 1 inch thick. A ¼ inch dead air space extending entire length of casing between shells, except 4 inches on each end. This results in a combination of non-conductive materials that prevent radiation of heat.

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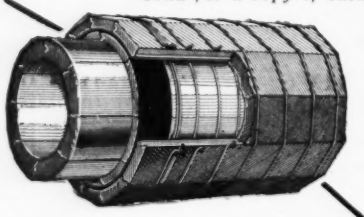

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Massachusetts

Boston Master Plumbers and Plumbing Supply Jobbers Hold Joint Outing.

Conservation was the keynote of the midsummer outing of the Master Plumbers' Association of Boston and vicinity, held jointly with representatives of Boston jobbing houses, at Villa Napoli, overlooking the Atlantic Ocean at the famous Nantasket Beach, on Wednesday, August 14th.

With such a keynote, it was highly fitting that, as the members looked beyond the distant horizon to the eastward, seeing the smoke of battle, hearing the boom of the big guns and witnessing the carnage of battle, they should forego the usual program of their outing, a program of sports and merrymaking, and bend their undivided attention to more serious matters. Therefore the "outing" consisted solely of a lobster dinner, followed immediately by a business session which lasted until almost sunset. Then, in the teeth of a gathering thunder shower, while lightning played along the shores, ever growing nearer and nearer, they made the hour's boat trip back to Boston.

Most of the members took the trip down the harbor on the 11:15 a. m. boat, some disembarking at Pemberton for the famous electric train ride along the beach front of the Hull peninsula, a ride of five miles at express train speed in open cars, to Nantasket. Others remained aboard the boat until Nantasket pier was reached. Still others went over the road, a trip of 30 miles, in their automobiles. After the extreme heat of the morning in Boston, the cool breezes along the shore were doubly welcome.

Early in the trip, however, the press representatives received a strong reminder that the United States was a country at war. Armed with their kodaks, they approached the wharf. Hardly were they within sight of the docks when they were stopped by a man in civilian clothes who ordered them to give up their kodaks. Opening the lapel of his coat he showed a badge denoting that he was one of Uncle Sam's secret service men. Offers to wrap up the kodaks, to show that they were without films or to place them in charge of the purser of the boat until Nantasket was reached were equally unavailing and they reluctantly returned to the railroad station and checked the kodaks. As they passed to the boat again, Uncle Sam's guardian gave each a close scrutiny to see that the kodaks were not hidden beneath coats. Strict laws against kodaks being carried on harbor boats or along the waterfront were being enforced.

When dinner was served, ninety-two master plumbers and jobbers were gathered about the tables. A few more arrived on the next boat, making the attendance slightly more than a hundred.

Edwin W. Cox, president of the Boston Association, presided and officials of the Plumbers' and Jobbers' Associations, former presidents of the state association, former officers of the National Association and the State President, Daniel F. Carroll, of Lowell, Mass., occupied places at the head table. Jobbers and master plumbers occupied small tables about the spacious dining room. During the dinner an orchestra and cabaret troup entertained the party.

President Cox announced the purpose of the meeting and requested that the "Star Spangled Banner" be played by the orchestra, while every one stood. At its conclusion a toast to President Wilson, offered by President Cox, was drunk in sparkling spring water. Next came a toast to the success of the Allies, then a toast to "Our Boys: Those who are in France, those who are going to France and those

who are at home to back them up." Then came a silent moment with the members standing, in memory of those boys who have given their lives for democracy.

President Cox announced that a few brief remarks would be made by the master plumbers. National Ex-President James S. Cassedy, of Cambridge, Mass., active in the Trade Extension Campaign, spoke of the work of the committee in charge, in which the entire state was canvassed by master plumbers and jobbers, meetings were held where local master plumbers gathered and were told of the campaign for work for the plumbers, and were urged to get out of their shops and offices and drum up business by finding needed work to be done in existing buildings, and to take advantage of the extensive advertising campaigns, which the manufacturers are conducting. A complete account of this campaign, in which Massachusetts was the pioneer state, was given in a recent issue of "Domestic Engineering."

State President Daniel F. Carroll spoke briefly of needed laws for plumbers in Massachusetts and of the work, which a committee of the state association was carrying on to secure these laws. One of these conference committees has secured the appointment of a recess committee to revise the plumbing laws of the state, consisting of a representative of the Master Plumbers, a member of the State Board of Health, a member of the Journeymen's Union and a member of the Plumbing Inspectors' Association, so that whatever bills they may report will have strong backing before the coming session of the legislature. He also touched upon the state lien laws.

Ex-President J. Preston Perham, of the State Association, announced the plans for the outing of the State Association, at Webster the following week and urged a large attendance.

President Cox then turned the meeting over to H. W. Thorndike, of Boston, head of the Jobbers' Association and president of the F. W. Webb Manufacturing Co., of Boston, who presided during the remainder of the meeting.

Mr. Thorndike read rulings from the War Industries Board, affecting the plumbing trade, and of the rulings of priority boards. He declared that business should be kept as nearly normal as possible, quoting Secretary of the Treasury McAdoo and Secretary of War Baker, urging business stability. He said that plumbing was an important part of the building trade, which had been more or less affected but was vitally essential to the work of the government as well as to the prosperity of the country.

DeCourtney Cleveland, president of the Central Foundry Co., of New York City, was then introduced.

Mr. Cleveland, who is also chairman of the War Service Committee of the National Soil Pipe Association, said that every business man must practice conservation; that everything usable must be used, even if by using it the work should be of only a temporary character. There must be no waste. Repacking will save much material. Manufacturers must sort of police the situation and if they feel that a jobber or master plumber is ordering excessively they must investigate the case and see that only such goods as are essential shall be sold. Jobbers must pass this information around among the master plumbers. A master plumber must virtually show an order for work to be supplied with goods. We must use a much larger amount of scrap than heretofore. Thickness of pipes must be cut down to help conserve. If city and town ordinances conflict with such use of thinner pipe, the War Industries Board should be notified. If the cities and towns can't be made to see that conservation is demanded, the War Industries Board will promptly inform the cities and towns that work must be done according to their rulings or not done at all. Such

The Money that Changes Hands for Fresh Water

Are you getting your share of the money that is changing hands every day for fresh water systems?

Thousands of farmers are investing in water systems—and the National Fresh Water System is the easiest to sell because it supplies **fresh water straight from the well.**

Compressed air operates a powerful air-driven pump **in the well itself,** delivering a steady stream of **fresh** water. No storage tank.

Dealers have had remarkable success with the National Fresh Water Systems. It offers a highly profitable opportunity that you cannot afford to miss. Write your jobber today for dealer's special proposition.

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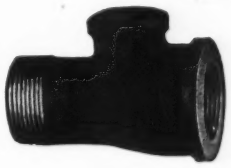
Different from Ordinary Fittings

When you use a Detroit Malleable Iron Fitting, you have a light fitting, which at the same time has great tensile strength.

Uniform Standard Non-Porous



Will not leak air

Guaranteed for 150 lbs. steam working pressure.

We also make a high grade line of Valves for Steam, Water, Air and Gas.

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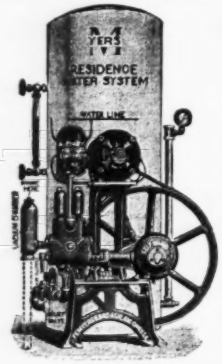

Myers Self-Oiling Electric House Pump

The demand for this Pump is steadily increasing. Some plumbers and pump men prefer to order it without the tank and furnish the tank themselves, while others order the complete Outfit, as illustrated, and thus save themselves the time and labor of connecting up.

Either method is entirely satisfactory to us, for the Myers Self-Oiling Power Pump, whether sold with or without the tank, is guaranteed to give efficient and economical water service.

As an up-to-date dealer, this pump has many inducements for you, and our catalog tells all about them. Write today.

F. E. MYERS & BRO.
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The AMERICAN Bent Tube Sink Trap

WITH CAST FEMALE IRON PIPE OUTLET

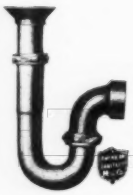

Fig. 2386

This trap can be furnished in either 1¼ inch or 1½ inch size.

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Manufacturers of
FINE N. P. BRASS SPECIALTIES

"SEE-VEE" Vapor and Vacuum Specialties Save Fuel

Our Booklet on modulated and Vapor heating is full of instructive matter. It also illustrates and describes our specialties. Send for your copy.

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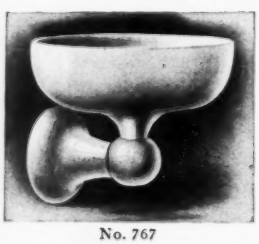
American Beauty Line
—of—
Pure White Bathroom Fixtures

YES SANITARY IS



No. 767

No unsightly screws on face of Post Brackets—a new and novel feature.

Post Brackets only 2½ in. Smallest ever made.
Order Sample

The up-to-date, better kind.

Order from your jobber.

Bay Ridge Specialty Company, Inc.
Trenton, N. J.

moves will result in more iron going into shells for the army, which is what we all want to help in making a success. This program is going to result in standardizing stocks of merchandise and will cut out the odd and freakish shapes and styles. It will mean the carrying of smaller stocks of merchandise and will make such stocks more saleable.

Then followed a discussion with the master plumbers of the use of reducers, Ys, etc., during which Mr. Cleveland explained the added cost of reducers by explaining the greater difficulty encountered in their manufacture.

W. D. Kerr, sales manager of the Walworth Manufacturing Co., spoke on malleable iron and cast iron fittings. He said that the business men of today were asking: "What can we do to conserve?" The spirit of selfish personal gain was gone, and everybody was trying to do his best to help the government in winning the war. Therefore government requirements must first be met. This resulted in the carrying of very much broken stocks.

Robert E. Sargent, of the Standard Sanitary Manufacturing Co., said that it was essential, when ordering supplies, that the jobbers specify what were ordered for essential work and what for non-essential, also which classification of the essentials they came under. This would materially simplify deliveries. It would help the manufacturers, the jobbers and the master plumbers. He said that the stocks in the hands of the manufacturers were necessarily low.

E. W. Harvey, of the J. L. Mott Iron Works, spoke on conditions resulting from the war and of the necessity for placing government orders ahead of all others.

W. G. Titus, of the Trenton Potteries Co., spoke of the government rulings regarding the cutting down in fuel. elimination of the non-essentials and the serious shortage of labor. He said that if, in completing government contracts, there was an accumulation of stocks, then arrangement may be made with the government to dispose of the surplus to the jobbers, which would relieve the master plumbers. Of if, when firing a goverment order, room was left in the kiln for other articles, then it would conserve the coal used to fill the vacant space in the kiln with other orders. Under other conditions, the government orders would take precedence over all others. When there was a surplus, then the manufacturer could allot this surplus to the trade.

Charles A. Burns, of the Union Soapstone Co., spoke of conditions affecting the soapstone industry. Frank M. Miller spoke on conditions affecting plumbers' woodwork, declaring there was no immediate shortage of such supplies.

E. A. Morris, of the Pierce, Butler & Pierce Manufacturing Co., said that the radiator business will probably be put on a 50 per cent basis. He said that the government was directing its endeavors, among other things, to conserving fuel, hence it was the patriotic duty of the master plumber to hunt out the householder or building owner, who had an old heating apparatus which he was operating at a great cost in fuel, and to convince him that he should replace it with a modern apparatus which would use far less fuel. He said that he believed there would be no shortage of boilers and radiators for the rest of this year.

The day's program was arranged by the outing committee of the Master Plumbers' Association, consisting of Edwin W. Cox, James S. Cassedy and J. Preston Perham, with Secretary Robert C. Van Amringe and members of the Jobbers' Association giving material assistance.

In addition to those already mentioned, those present included:

Master Plumbers:—Past National President Daniel Finnerty, of Nahant; Albert E. Roberts, William N. McKenna,

W. H. Monks, C. J. Donahue, M. J. Kelly, M. T. Kelly, D. W. Palmer, John F. Bruehel, A. A. Thompson, P. J. Sullivan, Robert A. LaCentra, James J. McCarthy, William P. Kane, C. B. Tucker, Daniel F. Duggan, James A. Cotter, Albert E. Touchet, David Carlin, John W. Zehringer, R. H. James and F. D. Kirby, of Boston; Frank H. Morgan, of Lynn; C. J. Murphy, of Charlestown; W. J. Hanson and William L. Hanson, of Somerville; A. Frank Bonney, Frank B. Connor, F. F. Muldowney and W. H. Russell Goudey, of Brookline; Andrew F. Curtin, of Medford, a former president of the Boston Association, and John J. Vogel, of Roslindale.

Supply Men: R. D. A. Thompson, of the Thompson-Durkee Co.; Frank W. Hubbard, of W. B. Hubbard & Sons Co.; Frank H. Locke, of Locke, Stevens & Co.; E. F. Butler, of E. F. Butler & Co.; Joseph F. Corcoran, of the Corcoran Supply Co.; Frank A. Munroe, of the Cambridge Plumbing Supply Co.; J. E. Slattery and George W. Burke, of Crane Co.; George E. Perkins, of the Hercules Iron & Supply Co.; D. P. Sullivan, Jr., of the D. P. Sullivan Co.; O. F. Chellis, of the Dalton-Ingersoll Manufacturing Co.; A. W. Rich and Rufus Estabrook, of R. Estabrook's Sons; George E. Perry and H. A. Oliver, of the George E. Gilchrist Co.; H. E. Chadbourne, of the Kohler Co.; Thomas F. Martin, of Thomas F. Martin & Co.; W. C. Brackett, of the Sanitas Manufacturing Co.; George E. Stevens, of the Trenton Potteries Co.; Harry Dodgé, of Brown-Wales Co.; Frank Grady, of the F. W. Webb Manufacturing Co.; Frank Leary, of the Jas. Barrett Manufacturing Co.; J. F. Donahue, of the Central Foundry Co.; T. A. Mulloney, secretary of the Jobbers' Association; Harry G. Starr and A. Campbell, of the William H. Gallison Co.; Frank M. Mills, of Boston; William Verry, of the Hercules Iron & Supply Co., and D. J. Hurley, of the Jas. Barrett Manufacturing Co.

Connecticut

John J. Miller, who has conducted a plumbing establishment at Southington for some time, expects soon to be fighting the Kaiser, and in preparation for his entry into the army has sold his business to the Gould Co. William Leary, who had been in Mr. Miller's employ for a long time, is associated with the new owners.

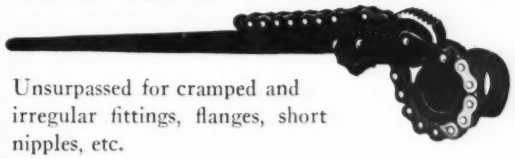
The W. P. Kirk Co., of Bridgeport, has the contract for installing plumbing and vapor heating in a handsome new residence in that city for H. E. Husted. This company also has a contract for installing the heating plant and the plumbing in a store and loft building on Main Street, and the plumbing and heating in a new isolation hospital building for St. Vincent's Hospital, Bridgeport.

M. J. Daly & Sons Co., of Waterbury, has been awarded the contracts for installing plumbing and heating systems in the Duggan school gymnasium. The heating contract was awarded the firm on a bid of $26,257, while the plumbing will cost the city, $25,648.

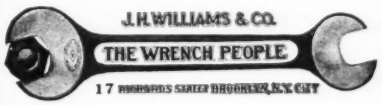
Twenty-two New Haven journeyman plumbers are in in the army and navy, while many others have quit the trade to work in shipyards and munitions plants.

A record in building construction was made recently at Bridgeport, where a canning and dehydrating plant was erected on the city hall lot in six hours. The carpenters and others, who did the work, gave their time after their regular hours. Plumbing and heating systems were installed by the William P. Kirk Co. at actual cost. The building was erected for and will be operated under the direction of the Bridgeport War Bureau.

WILLIAMS' "AGRIPPA"
Chain Pipe and Fittings Wrench



Unsurpassed for cramped and irregular fittings, flanges, short nipples, etc.



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WHEN
Building Bigger Business
Install **"SANIDOME"**
Bibbs, Bath and Basin Cocks
Your Customer Will Pay More and Make More Profit For You
Write for information
THE HAYDENVILLE COMPANY
HAYDENVILLE, MASS.

WOLVERINE FLEXIBLE
JOINT CONNECTIONS

FOR OLD OR NEW WORK

BUILDING BIGGER BUSINESS

Plan a campaign on Wolverine fixtures.
WOLVERINE BRASS WORKS
GRAND RAPIDS, MICH. SAN FRANCISCO, CAL.

At Your Finger's End

A complete and accurate table of 45 degree Offset Measurements from ⅛ inch to 21 feet, increasing by eighths.

The Alexander Table

was compiled for your convenience. Worth many times its cost in time-saving.

Price $1.00 prepaid.

Size 3½x5 inches Bound in Leather

DOMESTIC ENGINEERING
407 S. Dearborn St., Chicago, Ill.

Building Bigger Business

New Business from Old Buildings

Grasp the Opportunity

Dig out your 1917 Ledger and make a list of the homes in which you repaired tank heaters during the year. Almost all of these homes can afford an Automatic Water Heater—and it's a safe bet that you can sell them a

"PITTSBURGH"

You're as good and maybe better than the average salesman. You can't tell until you try. Do not wait for the business to come to you. You can make more money by selling and installing one "Pittsburgh" than you can on 10 odd repair jobs.

If you would like us to circularize your prospects with educational advertising literature before you call on them, send us your list—we are only too glad to help you make some money.

Pittsburg Water Heater Co.
Pittsburgh, Pa.

Indiana

Indianapolis and Vicinity.

With the taking out of permits this week for the construction work at the Prospect plant of the Citizens Gas Co., in Indiapapolis, the estimated cost of which was $411,000, building operations in August will exceed those of July, which was the banner month so far this year, according to an aunonncement by J. C. Hays, chief clerk in the office of Blaine H. Miller, city building commissioner. An increase in the number of residence contracts is also looked for this month, Mr. Hays said.

Frank Stewart, of 935 Massachusetts Avenue, Indianapolis, has received the contract to install the plumbing in the new residence and garage that is to be erected at Forty-sixth and Broad Streets, for H. W. Fechtmann. The heating contract was awarded to Wm. H. Johnson & Son Co., 330 East St. Joseph Street, Indianapolis.

The Cotton-Wiebke Co., of 1720 East Tenth Street, Indianapolis, was the successful bidder for the plumbing contract on the new $30,000 warehouse that is to be erected at Noble and Louisiana Streets for the G. & J. Tire Co. The heating went to the Wm. H. Johnson & Son Co.

Local plumbing and heating contractors are preparing bids for the work on the new two-story apartment building that is to be erected for John Baker at 2059 North Illinois Street.

Other Cities in the State.

One hundred and seven building permits, with an estimated valuation of $347,711, were issued during the month of July in South Bend, according to a report from the city building commissioner. During July of the previous year there were 111 permits issued at an estimated value of $282,163. This makes a gain of 19 per cent in the value of the proposed erections, but makes a loss of three per cent in the number of permits issued.

The contracts for the installation of a heating plant in the Riley school, south of Newcastle, and in the Turner school, to the west of Newcastle, were awarded to J. J. Barnhart, of Wilkinson, Ind., at a meeting of the township advisory board this week.

The Lige Heating & Ventilating Co., of Auburn, has received the contract to install a heating system in the new township school building that is to be erected near Fort Wayne, at a cost of $8,000.

Missouri

St. Louis.

The anomalous situation in which members of the plumbing and heating firms at present find themselves will soon be a thing of the past in St. Louis, relatively at least. We refer to the great demand for their services and their inability to do the work demanded because of the shortage of material and the unsatisfactory condition of the labor situation. The silver lining to the cloud seems to be the fact that almost without an exception the members of the building and real estate firms of the city are of the opinion that the building situation is in for a substantial boom in the immediate future. That there will be little activity in the line of office buildings will not be denied. The Jane Arcade and the Kresge Buildings will undoubtedly be all the work done in the downtown district for the coming few months. The greatest activity will be in the line of bungalows and apartment houses. With the coming of

winter the fuel and servant problem will undoubtedly become very acute, and people realizing this are at present making an unprecedented rush to apartment houses and to small dwellings. Of the latter the 5 and 6-room bungalows are very popular. The ultimate effect of such a movement upon the plumbing and heating fraternity will be to stimulate their business. The trade will welcome anything that looks like a boom to the building business.

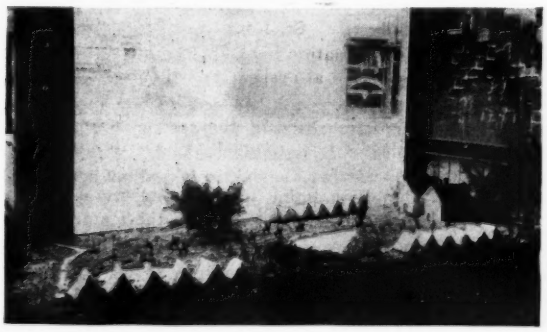
The Bradley Heating Co., of 3834 Olive Street, has recently secured contracts for installing heating systems in the following structures: The Columbian Club's new building, $3,000; the Central Institute for the Deaf, $1,900; the Alligator Oil Clothing Co.'s building, $10,075; George Elder's residence, $1,800, and C. E. Brueggeman's residence, $900.

Washington

Seattle and Vicinity.

One of the conditions which is said to have held back building operations in Seattle, to some extent, at least, was recently cleared up by Charles A. Piez, vice-president of the Emergency Fleet Corporation, who, on a recent visit to Seattle, advised that this city is expected to solve, quickly and satisfactorily, its own housing problem, and that the government will not spend any money for this purpose in Seattle. Apprised that the government is making no plans to aid the city in a solution of this important phase of war work, officials of the Chamber of Commerce and Commercial Club immediately put in motion machinery to stimulate building, and results have already been noted. It is estimated that at least 5,000 residences must be built in Seattle within the next five months, if the demands of industrial workers for homes is to be met adequately. It is not planned to organize building companies through public subscriptions, or anything of that nature, but every possible effort will be made to influence property owners to construct homes upon their vacant lots. It is conservatively estimated that between now and January 1st, 12,500 additional workmen will come to Seattle to enter shipbuilding and allied industrial work, and, as the present housing facilities in the city are utilized to the utmost, new provisions must be made for these workers and families. Contractors and public-spirited men are taking hold of the project with encouraging energy, and it is believed that the remaining five months of the year will set new records for residence and apartment building in the city.

Figures compiled by the City Building Department for July



The Show Window of A. M. Goddard, at 2413 Pacific Avenue, Tacoma, Wash. Mr. Goddard is Secretary and Treasurer of Tacoma Master Plumbers' Association and of the Washington State Association of Master Plumbers.

PORTABLE SHOWERS
SPECIAL PRICES IN DOZEN LOTS
SHOWERS OF ALL DESCRIPTIONS
GOETZ BRASS COMPANY
630 N. FRANKLIN ST. CHICAGO, ILLINOIS

The Hotstream WATER HEATER
Kerosene Water Heater
Here is a REAL Kerosene heater. Heats as HOT and FAST as a gas heater. Patented wickless burner generates its own gas, and throws a clean, powerful, odorless flame. Will run over 12 hours on a gallon. Send for catalog and folder.
THE HOTSTREAM HEATER CO., 1375 E. 17th St., Cleveland, O.
"Makers of Heaters That Heat" Noiseless blue flame—like gas.

THE SIGNIFICANCE OF A NAME
LOOK FOR NATIONAL THE NAME
¶ The real significance of a trade name rests with the underlying merit of the product it distinguishes. An announcement on this subject will appear in the September 7th issue. ¶ The trade name to be featured is "NATIONAL"—the product, "NATIONAL" Pipe—the title, "A NAME AMONG NAMES." ¶ Watch for this announcement!
NATIONAL TUBE COMPANY Pittsburgh, Pa

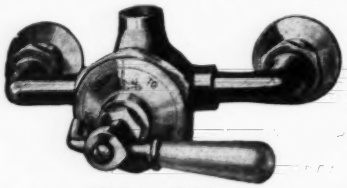
"FEMCO" Specialties
A standard line of Plumbers' Brass Supplies with an established reputation for
Quality Service Originality
WRITE FOR PRICES AND DETAILS
Frost Manufacturing Co. Kenosha, Wis.

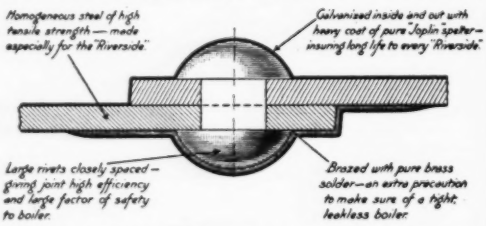
ELECTRIC HOUSE PUMPS Dayton WATER SUPPLY SYSTEMS
Suction Pumps and Complete Water Supply Systems
pumping capacities 120 to 1,600 gallons per hour. Enticient Deep Well Pumps with Hyatt Roller Bearings and silent chain drive, pumping capacities 150 to 2,000 gallons per hour. Write for bulletins and price sheets.
The Dayton Pump & Manufacturing Co.
DAYTON, OHIO New York, N. Y., 30 E. 42d St.

No. 2A Thermostat
MFG. CO. ROBERTSHAW YOUNGWOOD, PA
The standard for 30-40 gal. boilers, and single coil heaters or equivalent. Has ⅜-in. gas openings.
We Make All Sizes

UNCLE SAM has tested our
STANDARD PORTABLE VISE BENCH AND PIPE BENDER
and same has proved satisfactory. HE is now one of the THOUSANDS of satisfied users we have. Drop us a line and we will send you full particulars, or ask your jobber for same.
STANDARD IRON WORKS
508-10 E. 74th Street, New York City

ALLEN FLUX
NON-ACID—FOR SODERING
Be sure you have one of our handsome display cartons on your counter. It makes steady customers for Allen Soder sticks.
If you want to get better soder-ing results with less labor and more certainty—send for our circulars.
L. B. ALLEN CO., Inc., 4526 N. Lincoln St., Chicago

ROYAL
Mixing Valve for Showers
Simple in Operation—Few Working Parts.

Write for Catalogue.
THE ROYAL BRASS MFG. CO. CLEVELAND, OHIO

The "Riverside" Riveted and Brazed Seam

Homogeneous steel of high tensile strength — made especially for the "Riverside"
Galvanized inside and out with heavy coat of pure Joplin spelter — insuring long life to every "Riverside"
Large rivets closely spaced — giving joint high efficiency and large factor of safety to boiler.
Brazed with pure brass solder — an extra precaution to make sure of a tight, leakless boiler.
The Strongest and Tightest Seam on any Range Boiler
Riverside Boiler Works, Inc.
Cambridgeport, Mass.

MARVEL
"2 in 1"
Adjustable Shower Trap
embodies the double drainage principle.
Used by most discriminating plumbers. The trap you will prefer after giving it a trial.
Cast iron, black or galvanized. Tapped 2-in. iron pipe.
We make a complete line of the famous MARVEL Traps.
Order from your jobber.
Made by
DETROIT MARVEL BRASS MANUFACTURING CO.
326-332 Rivard Street, Detroit, Mich.

Tank Fittings of Quality
1856 "McSHANE" 1918
The ORIGINAL Compound Lever Ball Cock, Elevated, Low-Down, Top and Bottom Supply. Tank Levers and Valves.
McSHANE BELL FOUNDRY CO.
BALTIMORE, MARYLAND

indicate that property owners are yielding to the appeal for new homes as of a total of 1,080 building permits for the month, 361 were for residences. This is 100 more than were issued in June.

The Hunter Track Improvement Co., Mt. Baker Park, is constructing six modern residences, to cost from $4,000 to $6,000 each. Bids for plumbing and heating will be taken by H. T. McGregor at the company's office at Mt. Baker Park.

The contract for plumbing in the new $200,000 concrete building, to be erected by the Pacific Net & Twine Co., has been awarded to Eckart Plumbing & Heating Co., 1614 Third Avenue. The heating contract was awarded to W. D. Allen, Stuart Building.

Other Cities in the State.

Bids are now being taken from a selected list of contractors for the construction of the first unit of the big Government housing project at the Puget Sound Naval Yard at Bremerton. The project will include the construction of 250 houses for navy yard workers and a 400-room concrete hotel, besides two large concrete apartment houses, at a total cost of $1,500,000.

Aside from the tremendous government housing project in Bremerton, private home building has shown a remarkable impetus. O. E. Rowe, a contractor from Seattle, is building four modern homes at a cost of more than $10,000, and similar activity is going on in all parts of the city. Plumbing and heating contractors are rushed with work, and are limited only by the number of workmen that they can obtain.

The G. M. Standifer Construction Corporation, operating a large shipbuilding plant in Vancouver, plans the construction of a small city in the vicinity of its shipyards. A hotel with accommodations for 500 to 600 persons, and construction of 100 cottages and bungalows will comprise the first unit of the work, which will cost about $500,000. The hotel will be 150x300 ft., three stories, equipped with modern heating, ventilating and sprinkler systems. To facilitate the undertaking, the Vancouver Home Co. has been formed, composed of company officials, and headed by R. V. Jones, comptroller of the concern. Several designs will be used in construction of the homes, and work will be rushed. It is expected that plans will be ready for bidders within thirty days.

Oregon

Portland and Vicinity.

A strenuous campaign will be immediately started in Portland by the Portland Housing Association of the Chamber of Commerce, to remedy some of the housing evils that exist in that city, due to the sudden influx of thousands of shipyard and other war workers. The association, after a thorough and comprehensive investigation into conditions, points out that in many districts sanitary and health conditions are deplorable, that insufficient plumbing and ventilation is the rule, and that very little regard to health and safety has been shown in the overcrowding of houses and of lots in certain sections of the city. The demand for homes continues unabated, and it can only be met by immediate construction of hundreds of new houses and apartments.

Plumbing and heating contractors have experienced an unusually busy summer season particularly in repair work which has set new records. The large number of old homes that have been rehabilitated and made into small apartments has caused a tremendous number of small heating and plumbing jobs.

Architect L. I. Thompson, 91 North Tenth Street, Portland, is preparing plans for a proposed Industrial School for Boys to be erected by the county. Temporary arrangements will be made by remodeling some of the present building at a cost of $10,000, including improvements to the plumbing and heating systems.

California

San Francico and Vicinity.

Building is daily getting to be more of a war and a Government matter, and supplies are hard to get for anything that cannot show directly or indirectly a war need. Still, it is surprising what a lot of building can show a more or less direct bearing as a war necessity. Most of the plumbers are busy, and in some way or another the absolutely necessary supplies for many jobs are secured.

Otto Krutz, 445 Stevenson Street, has been awarded the contract for the plumbing, heating and electrical work on the addition to the Sears-Roebuck Co.'s warehouse.

Bids are being received at the Navy Yard, Mare Island, for the plumbing work on the two-story frame lavatory building to be erected for civilian employes at Mare Island.

Plans are being prepared by The Bureau of Architecture, City Hall, for a one-story, four-room school building to be erected on Silver Avenue. Bids will be called about September 10th.

Other Cities in the State.

Henry Clark, of San Diego, has been awarded a $13,543 contract for the installation of a fresh water supply system at the naval training station.

Bids are being taken for the construction of a two-story frame dormintory building for the Mt. Tamalpais Military Academy. Separate figures are being taken for the heating and plumbing contracts.

A. H. Taylor, of Alturas, has taken a partner into his plumbing business and will in the future operate under the name of Taylor & Ingraham.

BUSINESS INSURANCE.

(Continued from Page 281.)

"I am reminding you possibly that you are a plumber," I suggested significantly.

"And what is the answer?" he asked.

"Get acquainted, get *personally acquainted* with everybody, who in any way is responsible for any part of that eighty thousand dollars' worth of business, and then tell a few of your friends and neighbors what a dandy good fellow you are. Make them want to know you better. Don't trust to *chance* to have anybody know about you. *Tell it to them! Tell it to them,* and *tell them again.* In plain every-day English, insure your business against *chance* or *accident.*"

"How?"—he was really enthusiastic.

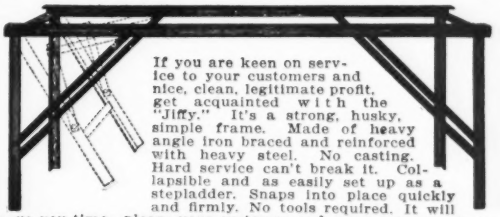
"Send them a letter every month *from the boss,* a letter of friendliness—a letter of good cheer. Let them know you are happy and grateful for that $80,000. Let them know you are waiting to serve them. Gosh, man! It would take twelve months to get you acquainted with the host of friends and customers you have neglected for years."

"I guess your line of goods is about the kind I ought to use in my businesss," he confessed with a twinkle in his eye.

Moral: Go into the office and lock the door. Put your feet upon the desk and *think—think*: "What am *I* doing to insure my business against chance or accident?"

"JIFFY"

Collapsible Laundry Tray Frame



If you are keen on service to your customers and nice, clean, legitimate profit, get acquainted with the "Jiffy." It's a strong, husky, simple frame. Made of heavy angle iron braced and reinforced with heavy steel. No casting. Hard service can't break it. Collapsible and as easily set up as a stepladder. Snaps into place quickly and firmly. No tools required. It will save you time—please your customer and mean more profit for you. Ask your jobber.

THE FORD DONLEY CO., 1940 East 117th St., Cleveland, Ohio

Eagle All Lead Roof Flange

LEAD PIPE
Length, 6 inches
Diameter, 4½ inches
Made in Angles, 45 deg., 22½ deg. and Straight.

SIZE OF APRON
15 inches Square

No Caulking To Be Done
Joints Lead-burned — No Solder Used

Flexible Adjustable Economical

Write for Circular and Prices.

Manufactured only by

The Eagle-Picher Lead Co.
CINCINNATI, OHIO

Use Products

manufactured by

RAYMOND LEAD WORKS
BRANCH UNITED LEAD CO.
735 South Washtenaw Ave. CHICAGO

If Your JOBBER Cannot Supply You With Our Goods, Send Your Orders To Us Direct

NIEDECKEN MIXER

For Shower Lavatory Bath Sink Etc.

Write for Bulletin D-10-X

HOFFMANN & BILLINGS MFG. CO.
MILWAUKEE

WARCO

Floor and Ceiling Plates

Substantially made of heavy stamped steel. May be cut to fit any conditions. Adjustable. Unbreakable.

Hinge and catch new in construction and invisible when plate is closed.

Nickeled on copper. Highly polished. Sizes, ⅛-in. to 3-in.

Write for prices and details.

W. A. RUSSELL & COMPANY
63 W. 37th St., New York City

OVERTON
Plumbers' Adjustable Flashing

Hugs any Pipe—Water Tight

Fits any Angle — Self Adjusting
No turning or twisting necessary
Made of high grade galvanized and copper materials.
Your jobber has them in stock.
Write for illustrated circular
Manufactured by
Duluth Corrugating & Roofing Co.
DULUTH, MINN.

Just Clean Sweep Traps—

The Knowledge we have gained, the Judgment we have developed, the Business Foresight in production of the Best Trap in the World is all yours for the asking.

Just mention Clean Sweep Traps.

You will get them.

The Government uses them, and everybody else, nearly.

In either Lead or Brass.

Detroit Sanitary Supply Co.
Sole Manufacturers
Second Ave. and Antoinette St.
DETROIT MICHIGAN

TRY BLUE SEAL
AT OUR EXPENSE

This liberal offer is for plumbers who have never used **BLUE SEAL**. It gives an opportunity to try at our expense the original Money Back Drain Pipe Solvent.

Cut out this advertisement, mail it direct to us with your own address—and your jobber's. We will then send you, transportation charges prepaid, six one dollar cans (2 lbs.) **BLUE SEAL**

DRAIN PIPE SOLVENT

Use these six cans according to directions to clear waste and drain pipe stoppages. If the Solvent does all we claim for it you are to send us $3.60 (special price for plumbers) within ninety days. If not the trial costs you nothing.

10,000 plumbers now use **Blue Seal.** Over 300 jobbers stock, sell and recommend it. If you haven't used it, this is your opportunity

BLUE SEAL CHEMICAL CO.
417 E. 16th St. New York

TRIPLEX PUMPS.

(Continued from Page 276.)

This is a first class direct way of fighting fire on a farm. But the pump should have a sufficient capacity to supply a good stream. By good stream we mean one that will throw, say, 10 gallons of water per minute on the fire. This is a good stream from a garden hose. The pump in question will do that and hold up pressure of perhaps 50 to 75 pounds at the same time.

The connections between pump and well in Fig. 2 are simple. All that is required is to drop the suction down into the well substantially as shown in Fig. 4.

If the water is near the floor level an ordinary elbow may be used where suction turns down into well. But if water is, say, 15 feet or more below floor line, it may

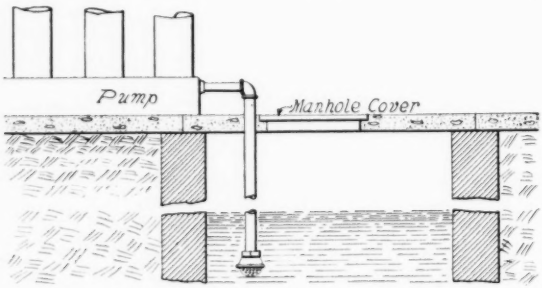


Fig. 4.

be a good plan to use a tee extending upward with three feet of pipe capped on top.

Of course, this is really an air chamber, but it is not put on for that purpose. It would be used to prime the pump when starting it, or any time priming may have to be done. The cap is unscrewed. Water is poured down suction pipe. The foot valve prevents it from going into well. The suction pipe therefore fills up. The cylinders of pump then are filled automatically by continuing to pour in water. After suction pipe and cylinders are filled, the water will overflow at the cap. Cap is then screwed back again, airtight, and pump is started. This is a good primer, and may come in handy at times.

In our next article we may show how triplex pumps can be used for deep well pumping. And in closing this article the author desires to state that, although he has concentrated his attention on Triplex pumps here, he does not mean to infer that these pumps are better than other pumps. He may have the pleasure some day of saying something interesting about other types as well.

Philadelphia and Vicinity.

Morris Glick, of Seventh Street and Girard Avenue, has been awarded the contract for the installation of plumbing in a row of houses being erected for the U. S. Government on Elmwood Avenue, West Philadelphia.

George B. Grey has been awarded the contract for the installation of plumbing in John N. Gills & Sons' new factory in West Philadelphia.

B. Landau, 1216 North Fourth Street, will install plumbing and heating systems in a new garage being erected at the corner of Twentieth and Diamond Streets.

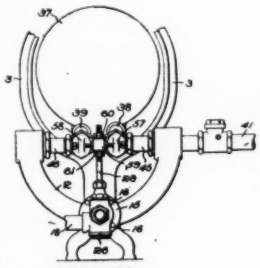
The Sun Ship Building Co., Chester, has had plans prepared for 1,000 houses to be erected near its plant for its employees.

H. Manning, of 825 Spring Garden Street, is remodeling the plumbing in the Wm. Sellers & Co.'s factory at Sixteenth and Spring Garden Streets.

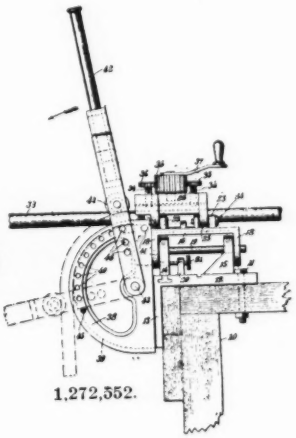
Patents

Heating Department.

1,272,470. Steam Trap and Valve Therefor. Frank A. Littlefield, Nashua, N. H., assignor to Nashua Machine Co., Nashua, N. H., a corporation of Maine. The combination with a support of a receiver mounted thereon, a water discharge valve, a steam admission valve, a vent valve, a fitting containing all of said valves, and means for automatically operating said valves on movement of said receiver.



1,272,470.



1,272,552.

1,272,552. Pipe Bending Machine. Robert P. Spencer, Seattle, Wash. A machine of the character described comprising a base, a vise having a bottom member and a top member, said bottom member being mounted upon said base and being provided with upwardly extending lugs, said top member being hinged to said lugs on said bottom member, a jaw supported by said bottom member, a jaw movably supported by said top member, means mounted upon said top member for moving said movable jaw, an anvil carried by said vise, and means to engage a pipe to conform the same to said anvil, substantially as specified.

Plumbing Department.

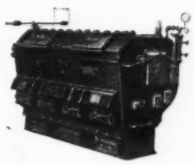
1,272,460. Seal Device for Sewers. Charles W. Knoll, Crete, Nebr. In a device of the character described, the combination of an outer shell, an inner shell disposed centrally within the outer shell, a cover plate for closing the upper end of the space between said shells, a valve seat formed at lower end of the inner shell, a vertically movable valve for said seat, a narrow housing extending diametrically across and within the inner shell, a rod projecting upwardly from said valve and extending through the lower part of said housing into the same, levers pivotally mounted intermediate of their ends to said housing and, having their inner ends connected to said rod, said levers extending through said housing and the inner shell and into the space between said shells, and weights carried at the outer ends of said levers.

1,272,899. Bath Room Fixture. Emile Berko, Brooklyn, N. Y., assignor to Charles Jaeger, Brooklyn, N. Y. A bath room fixture comprising a shank member having a head formed in one side with a socket extending toward but short of the center of the head and also counterbored forming a shoulder, said socket being provided with side

Economical Heating—A sufficient reason why you should install

PIERCE DOWN DRAFT HEATING BOILERS

For Steam, Water, Vapor, Vacuum, Heating



There are other reasons, too:

1. Magazine Feed.
2. Down Draft.
3. Smoke Consuming.
4. 25% Fuel Expense Saved.
5. 50% Less Attention.
6. All Cast Iron.

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PIERCE, BUTLER & PIERCE MANUFACTURING CORP.

Brooklyn NEW YORK Philadelphia
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Perfect Temperature Control with the MILWAUKEE Shower Bath

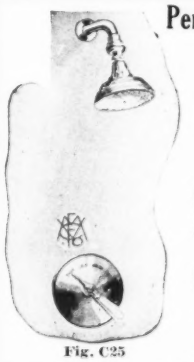


Fig. C25

Nickel plated shower head. Concealed mixing valve with china handle and nickel plated dial plate.

Built for service. Ask your jobber for the Milwaukee Shower Bath.

Made by Milwaukee Flush Valve Company Milwaukee, Wisconsin

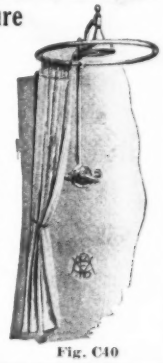
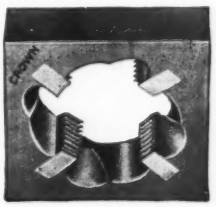


Fig. C40

"CROWN"

Guaranteed Tools and "Easy Cutting" Pipe Dies

"CROWN DIES" are "SCIENTIFICALLY MANUFACTURED." The teeth are "MILLED" not merely tapped as the ordinary Die. This is why "CROWN DIES" are the "EASIEST CUTTING" Dies on the market. They are the "BEST" Dies made and in the long run the "BEST" are the "CHEAPEST." Therefore, when ordering dies specify and insist on "CROWN DIES."



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Crown Die & Tool Co., 555 W. Monroe St., Chicago

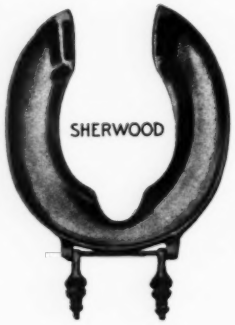
Mfrs. of "Crown" Pipe Cutters, Chain Post Pipe Vises. Stocks, Etc.

FOR lasting quality and true capacity use "KOVEN" Pure Iron, Double Row Riveted, Galvanized Range Boilers, or NACO Galvanized Range Boilers made of open hearth steel. These boilers may be bought of jobbers everywhere.

L. O. KOVEN & BRO.
50 CLIFF STREET NEW YORK

Will Last a Lifetime

SHERWOOD
Aluminum
Closet Seats



are break-proof, never wear out or come apart.

Strictly sanitary. Easily kept clean with soap and water.

Explain to your client the advantages of the SHERWOOD and he will want it.

Made in a number of styles.

A winner for the plumber.

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Sherwood Brass Works
1167-1175 Jefferson Ave., East
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Largest Manufacturers of Aluminum Tanks and Seats in the World

Ideal Basin Waste

A New Model which is not only **ideal** in name, but has proven itself **ideal** in overcoming all the objectionable features of the old style waste.

Brass Ground Seats.

Full 1⅝-inch size.

Improved cam movement lift—one of the new and distinctive features.

Inner plunger adjustable to any basin.

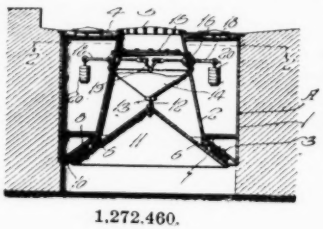
Sold to jobbers only.
Write for prices.

Manufactured by

C628 New Model

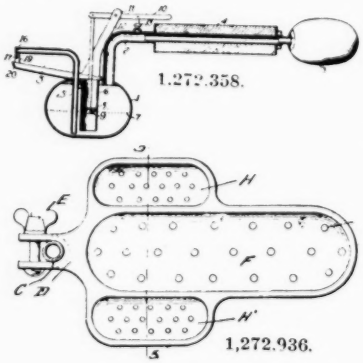
Street & Kent Mfg. Co.
549 Fulton Street,
Chicago, Ill.

seats or extensions on opposite sides of the shoulder, a nut seated against the shoulder and spaced from the side seats and walls of the socket, anchoring means surrounding the nut extending into said side seats to lock the nut from movement, a bowl member having a shank extending into the socket and provided with a central bore registering with the hole in the nut, and a threaded bolt extending into and through said bore through the nut and into the counterbore, substantially as set forth.



1,272,460. 1,272,899.

1,272,358. Portable Soldering Device. John Montgomery Bell, Chester, S. C. A soldering apparatus comprising a reservoir for solder, a passage communicating therewith, a valve in said passage adapted when opened to permit molten solder to flow therethrough, means for applying air pressure to said reservoir, a second passage communicating with said reservoir and having an orifice through which molten solder may be ejected, a member underneath said orifice adapted to conduct molten solder to said first mentioned passage and means supported by said member for positioning the work to be soldered under said orifice.



1,272,358. 1,272,936. 1,272,957.

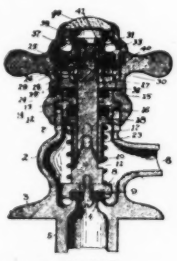
1,272,936. Bath Tub Appliance. Frank Frazzano, Washington, D. C. A bath tub appliance, consisting of a foot rest formed with an open yoke fitting upon and forming a clamp adapted to be connected with the spigot and formed with an integral holder for soap and for a brush or wash cloth.

1,272,957. Flush Tank Valve. Alexander F. Humphrey and Raymond C. Michaels, Pittsburgh, Pa., assignors of one-fifth to William L. Swartz, Pittsburgh, Pa. A device of the class described comprising a casing having an axial chamber therein provided with an enlarged lower portion having a plurality of relatively small side outlet ports, a valve seat arranged at the bottom of said enlarged portion, an outlet spout for said enlarged portion, a float controlled reciprocating valve within said chamber having one end adapted for engagement with said seat when the valve is closed and provided with a reduced guide stem on the other end thereof having a packing secured thereon, and a guide and stop cap for said stem secured to the upper end of the casing, said casing having a water inlet opening communicating with said chamber at points above and below said valve.

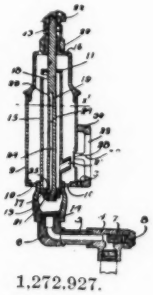
1,272,770. Air Valve for Pumps. Arthur W. Burks, Decatur, Ill., assignor to Decatur Pump & Mfg. Co., Decatur, Ill., a corporation of Illinois. A device of the character described, including in combination, a body adapted to be attached to a pump and to communicate with the interior of the cylinder thereof, said body being enlarged to form a reservoir, the passage into the cylinder opening near the bottom of the reservoir, a valve in said passage, and means for admitting air into said reservoir.

1,272,867. Self Closing Faucet. Fred Schulder, Cleveland, Ohio, assignor to United Brass Manufacturing Co., Cleveland, Ohio, a copartnership composed of Wm. J. Schoenberger and Benjamin F. Klein. In a self-closing faucet, a passaged body having a valve seat, a valve having a stem, a tension device to seat said valve, a hollow handle supported in rotatable non-rising position upon said body and sleeved upon said stem and having an annular undulating surface internally, a disk removably secured upon said stem internally of said handle and having an annular undulating bottom surface, rolling members seated upon the undulating surface of said handle beneath said disk, and a removable cap for said hollow handle.

1,272,770.



1,272,867.



1,272,927.

1,272,927. Drinking Fountain Head. Robert James East, Winnipeg, Manitoba, Canada. The combination with a drinking fountain head constructed to discharge a laterally directed stream, a casing surrounding said drinking head and a guard ring on said casing and in a location such that the stream of water is expelled therethrough, the said guard ring being spaced from the casing by means of upper and lower legs and detachably secured to the same by a pair of said legs, one of which is provided with a keyhole slot adapted to receive a headed pin on the casing and the other being secured to the casing by a screw, substantially as described.

Late News from San Francisco.

The first step in working out an adequate housing problem for the influx of war labor, particularly in and around Mare Island, was made a few days ago when contracts amounting to $1,500,000, were awarded by the United States Housing Corporation for the construction of the first unit of the Mare Island housing development plan. J. A. Marshall, of Berkeley, will do the grading, street paving, water, sewer and gas piping, street and house lighting, and will construct a pumping plant and storage reservoir. The plans call for 118 permanent buildings, consisting of dormitories, apartment houses, single and double houses, a school house and a store building. All of the streets will be paved and lighted with the electrolier system of lighting from underground conduits. No overhead lighting will be permitted above the streets, all telephone wires and house lighting wires being carried on pole lines at the rear of the lots. The pumping plant will have a capacity of 500,000 gallons and will provide an auxiliary water supply and fire protection service.

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Classified Advertisements

The charge for advertisements under this heading is $1.00 for 25 words or less, including heading and address; 4 cents each for additional words. To insure insertion, copy and remittance should reach us by Wednesday morning.

Situations Open

WANTED — THREE FIRST CLASS plumbers. Wages $5.50 per day for eight hours. Steady work the year round. Address Box 110, Memphis, Tenn. 8-17

Situations Wanted

WANTED—POSITION, BY PLUMBER and fitter. Can also install hot water, steam or hot air furnaces. Address 2552, care "Domestic Engineering," Chicago. 8-24

POSITION WANTED—AS ESTIMATOR or superintendent of plumbing and heating. Absolutely know the business. Twenty years' experience. Sober, reliable. Address 2551, care "Domestic Engineering," Chicago. 8-24; 31

For Sale.

FOR SALE—TWO SOFT COAL, DOWN draft, smokeless steam boilers of a standard make, rated at 5,000 ft. each. Used two seasons. No reasonable offer refused. Elmer Lawrence, Waverly, N. Y. 8-24

FOR SALE—EXCLUSIVE STOVE, plumbing, sheet metal, store and shop. Excellent location for man who understands the business. The Sanitary Plumbing Shop, Dunsmuir, Calif. 8-24

FOR SALE—HEATING PLANT: BIDS will be received by the Mapleton Board of Education, Mapleton, Iowa, up to 8 o'clock Friday evening, August 30th, for the selling of 2 American Boilers No. S4612 manufactured by the Kellogg-Mackay Co., and about 3,542 feet of radiation and accessible piping. These boilers and radiation are in good condition. Terms cash. The board reserves the right to accept or reject any or all bids. N. W. Pike, Secretary. 8-17; 24

Miscellaneous

WE BUY IRON PIPE COUPLINGS—spot cash. How many, either pounds or pieces have you of various sizes? Gwilliam Supply Co., 615 Christian Street, Philadelphia, Pa. 10-6,tf

WE BUY AND SELL USED BOILERS and radiators. D. B. Plbg. & Htg. Sales Co., Fort Wayne, Ind. 8-3; 24

SELL YOUR SURPLUS COUPLINGS and fittings. Write us. The A. & J. Mfg. Co., 557 W. Lake St., Chicago. tf

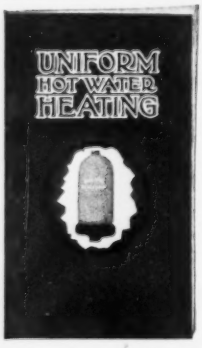
Government Proposals

Treasury Department, Supervising Architect's Office, Washington, D. C., August 8, 1918.—Sealed proposals will be opened in this office at 3 p. m., Sept. 5, 1918, for the completion of the Mechanical Equipment (Except elevator and lighting fixtures), of the United States Custom House, Appraisers Stores and Court House at Wilmington, N. C. Drawings and specification may be obtained from the superintendent of construction at the building or at this office in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 8-17; 24

Treasury Department, Supervising Architect's office, Washington, D. C., August 9, 1918.—Sealed proposals will be opened in this office at 3 p. m. August 30, 1918, for repairs to mechanical equipment in the U. S. Marine Hospital, St. Louis, Mo., in accordance with the specification, copies of which may be had at this office in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 8-17; 24.

TREASURY DEPARTMENT, SUPERVISing Architect's Office, Washington, D. C., August 14, 1918.—Sealed proposals will be opened in this office at 3 p. m., September 12, 1918, for remodeling toilet room, etc., in the United States post office and courthouse, Detroit, Mich., in accordance with drawing and specifications, copies of which may be had at this office or at the office of the custodian, Detroit, Mich., in the discretion of the Supervising Architect. James A. Wetmore, Acting Supervising Architect. 8-24; 31

TREASURY DEPARTMENT, SUPERVISing Architect's Office, Washington, D. C., August 14, 1918.—Sealed proposals will be opened in this office at 3 p. m., September 9, 1918, for Mechanical Stokers, etc., in the U. S. Post Office and Court House at Pittsburgh, Pa., in accordance with the drawing and specification, copies of which may be had at this office or at the office of the Custodian at Pittsburgh, Pa., in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 8-24; 31



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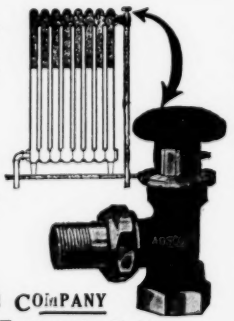

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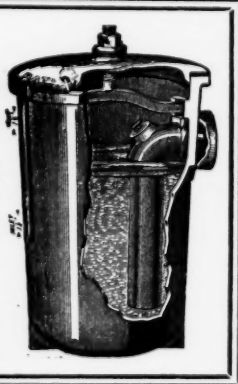

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